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COVER STORY

EDITOR'S NOTE: When Helene White offered to do a cover for the Alberta Naturalist, I was, of course, delighted, and accepted immediately. At that time I did not realize the September issue would be my last, but in retrospect I cannot think of a more appropriate artist for my last number. The very first naturalist I met in Alberta was Helene. At that time she was Editor of the newsletter of the Edmonton Natural History Club. She made me feel particularly welcome at my first ENHC meeting, and I am especially pleased to have her art work play a prominent role in my farewell issue. Helene also had an article and drawing in the June issue, and long ago was familiar to me as a regular contributor to the Blue Jay. Helene's art has been featured in several exhibits of nature art. Three more examples of her art accompany the fifth article in this issue. -M.K.M.

EVENING STAR

(Mentzelia decapetala)

by (Mrs.) Helene R. White
512 - 12 Street A North
LETHBRIDGE, Alberta
T1H 2J7

In the full sun on the rough clay or gravel hillsides where erosion seems the worst, grows a tall grey plant, all arms and legs in this, its second and final year. Its grey green leaves are deeply toothed, alternate and covered with tiny stiff white bristles, its flowers are tightly closed. At the feet of these oldsters scattered across the dry slopes are the yearlings, small ground-hugging whorls of leaves. Undisturbed they too will reach a height of approximately thirty-six inches next year.

During the day it is indeed an inconspicuous coulee adornment but as the sun slips behind the hills and shadows creep across the bottomlands this phantom plant stirs. Very slowly the yellowish

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white petals start to unfurl. When fully open it will be nearly three inches across and disclose a golden tassel at its center. The tassel is made up of hundreds of yellow stamens one and a quarter inches long. As the shadows deepen more and more ten-pointed stars appear on their grey plant-candelabras, randomly lighting the slopes with their white flames in celebration of yet another prairie night.

Even after the last blossom has faded and fallen, beauty and grace remain but you must search out this dried shadowy celebrity. The once stiff leaves turn brown and gracefully curve towards the stout stem, repeating the intricate flowing lines of an ancient illuminated manuscript. Where once the white petal-flame glowed only the cylindrical sconce remains, decorated with the gentle curves of the deeply cleft bracts around the sides of the vessel and topped with a flowing free-form star. A fitting container for the seed of the Evening Star, flower of the prairie moonlight.

Mentzelia decapetala - deca = ten, petala = petals
Blooming period - Late June to September
Locale - Dry eroded hillsides and banks. Southern Alberta.

THE EASTERN KINGBIRD AND THE MERLIN

by Rudi Butot
81 Capri Avenue, N.W.
CALGARY, Alberta
T2L OG9

On a fine fall day, on my way past the Calgary airport, I suddenly saw a "ball of feathers" suspended in the air, about four feet above the ground, that appeared to have four wings. As I pulled my car off the road for a closer look, I realized that I was looking at two birds with feet interlocked. The larger one was on top, and the smaller one dangled upside down, both flapping their wings.

Just as I came to a stop, the birds disengaged; one landed on the lowest strand of barbed wire of the fence along the side of the road, while the other landed on the next fence post beside it. I could now see what I was dealing with; the larger bird on the fence post was an immature Merlin (Falco columbarius), while the bird on the wire turned out to be an immature Eastern Kingbird (Tyrannus tyrannus).

I seemed to have stumbled upon a "game" of "cat and mouse", with bird participants. I could imagine that the young kingbird had risen to do battle with the Merlin, as the latter entered its domain, as is the usual behaviour for one of the family Tyrannidae. The Merlin being young, and only recently along and away from its brothers and sisters, as the case may have been, where this type of rough and tumble aerial sparring is not unusual, had engaged the smaller bird in mock combat.

After a minute or so, the Merlin launched itself from its perch on the fence post, and swooped down at the kingbird, without actually trying to capture it. However, the kingbird did not now rise to do combat, but flew low above the ground, to land again on the lowest strand two fence posts over; followed by the Merlin, which landed on the nearest fence post.

This "game" went on for about one and a half miles, two fence posts at a time, after which the kingbird took off across country, followed in hot pursuit by the Merlin, and both disappeared out of my line of sight, over the brow of a slight rise in the land.

EARLY INSECT RECORDS FOR THE CITY OF EDMONTON: 1977

by James D. Reist
Department of Zoology
University of Alberta
EDMONTON, Alberta
T6G 2E9

The unseasonally warm weather of mid to late winter this year

allowed several groups of insects to initiate summer activities earlier than usual. Following a report in the Edmonton Journal (February 15, 1977) of a butterfly capture (Nymphalis milberti, Milbert's Tortiseshell) at Whitecourt the author decided to investigate the insect fauna of a local ravine area at this time of the year.

Site Description

The site in which collecting was done was the north riverbank and adjacent hillside of the North Saskatchewan River immediately beneath the Alberta Provincial Museum Grounds between a north-south oriented ravine (Ramsay Ravine) and Government House Park.

The river bank rises from water's edge about three meters to a flat, cleared tableland about 25 meters wide. North of this cleared area the riverside hill rises about 40 meters at a 60 percent slope to a residential area. The entire hillside is vegetated - riverine wood of balsam and aspen poplar at the bottom, scrub aspen and low shrubs or herbaceous plants on the upper half. A small southwest facing bluff of sandy soil occurs on the lower half of the hill where it turns northward into Ramsay Ravine. Vegetation is scanty on the bluff consisting only of grasses and herbs.

As a result of southern exposure, slope of the hill and the paucity of vegetation in some areas the entire hillside receives full benefit from the sun's warmth on clear winter days. Consequently the collection sites were devoid of snow cover except for isolated patches hidden in shadows or dense bush.

Collecting was done at two sites within this area on three different occasions. The first site was the aforementioned sandy bluff; the second was a small footpath paralleling the bottom of the hill and extending from the bottom of the sandy bluff eastward into the poplar wood about 15 meters.

Collection Results and Observations

All specimens were identified to family only, using Borror

and White (1970). Specimens of any one family all belong to the same species.

Collection 1: 1330 hours to 1530 hours 20 February, 1977 by two persons. Weather: air temperature 10°C, no wind, bright and sunny.

Number Collected	Order	Family	Location & Activity
1	Orthoptera	Acrididae (short hored grasshopper)	Nymph on sandy soil of bluff
1	Lepidoptera	Noctuidae (Noctuid Mothes)	Adult in flight on footpath
1	Diptera	Muscidae (Muscid Flies)	Adult in flight on footpath
1	Diptera	Calliphoridae (Blowflies)	Adult in flight on footpath
1	Hymenoptera	Ichneumonidae (Ichneumon wasp)	Adult in flight - vegetation below footpath

In addition to those collected numerous Calliphorid flies (20) and four Muscid flies were observed in flight in the footpath area.

Collection 2: 1450 hours to 1520 hours 26 February, 1977 by one person. Weather: air temperature 1°C, light west wind, cloudy.

Number Collected	Order	Family	Location & Activity
1	Diptera	Calliphoridae	Adult alight on grasses - footpath

No other insects observed.

Collection 3: 1330 hours to 1430 hours 6 March, 1977 by two persons. Weather: air temperature 6°C, light west wind, hazy and partially overcast.

Number Collected	Order	Family	Location & Activity
1	Hemiptera	Nabidae (Damsel Bugs)	Adult in dead grass on footpath
2	Homoptera	Cicadellidae (Leafhoppers)	Adult in dead grass on footpath
1	Homoptera	Fulgoridae (Planthoppers)	Nymph in dead grass on footpath
2	Coleoptera	Carabidae (Ground Beetles)	Adult on sandy soil of bluff
1	Coleoptera	Coccinellidae (Lady Bird Beetles)	Adult on grass - sandy bluff
1	Diptera	Drosophilidae (Pomace Flies)	Adult flying - sandy bluff
1	Hymenoptera	Formicidae (Ants)	Worker foraging on sandy soil - bluff
1	Hymenoptera	Sphecidae (Thread Waisted Wasps)	Adult flying - sandy bluff

In addition to those collected, six calliphorids were observed in flight along the footpath and large numbers (50-100) of Leafhoppers were seen when the grasses along the path were disturbed.

Conclusion

The preponderance of adult forms indicates that development has been accelerated due to the warm weather. In addition, the warm weather has caused several adult overwintering forms to emerge from hibernation much earlier than usual, e.g. - the butterfly mentioned and probably the moth also.

Literature Cited

Borror, D.J., and R.E. White, 1970. A field guide to the insects. Boston, Houghton Mifflin Co.

USE OF CLIFF SWALLOW NESTS BY DIPPERS, IN WEST-CENTRAL ALBERTA

by Jim R. Salt
Peregrine Research and Documentation Ltd.

The author and V. Aziz, while occupied with mammalian studies along the McLeod River during April 1977, noted a pair of Dippers, (Cinclus mexicanus), feeding at a bridge some 15 miles outside the mountains, northeast of Cadomin. The birds were observed repeatedly during three days of work at this site; the male sang often, and both birds fed back and forth along a "territory" of river and bank ice no more than 0.5 km in length. When we noticed the birds flying up beneath the bridge (a concrete span construction, without ledges for perching) we investigated and found a Dipper on one of several Cliff Swallow (Petrochelidon pyrrhonota) nests, the top of which had been broken away. Further observation revealed that either one - and at times both - of the Dippers flew up to these perches whenever they captured certain large food items.

The food appeared to be the cases of caddis fly larvae - several empty ones were found on the ice beneath the nests. The Dippers required some time and effort to extract the larva from each case, and we concluded that the nests served as a stable perch on which to feed at leisure.

A visit to the swallow nests in early morning (ca. 5:30 to 6:15 a.m.) revealed one of the Dippers occupying an undamaged nest, and the other at a roost on an adjoining broken one. Thus, the Dippers apparently utilized these both day and night, for roosting as well as for feeding.

Dipper at Gorge Creek, Alberta

Photo by David M. Ealey

OVERHEARD (64)

Butterfly catching, anyone?

"An Am. Bittern dropped into a Pueblo backyard, mistaking a pool and chain fence for its habitual marsh and cattail closet; it unsuccessfully tried to dissolve into the fence. A butterfly net enabled Ligon to remove it to a real marsh."

Hugh E. Kingery
1975, American Birds 29: 886.

FLORA OF POLICE OUTPOST PROVINCIAL PARK, ALBERTA

by Keith Shaw
CARDSTON, Alberta

illustrations by Helene R. White
LETHBRIDGE, Alberta

Police Outpost Provincial Park was established in 1970 on 145 hectares of S6 T1 R26 W4, the site of an early North West Mounted Police post (Alberta Lands and Forests 1976).

The weather station at Carway, Alberta, 5.5 km east of the park has recorded a mean yearly temperature of 4.2° C, average annual precipitation of 51.7 cm and annual snowfall average of 241.5 cm. Sixty % of the annual precipitation falls during the growing season and snow has been reported for every month of the year (Canada Dept. of Transport 1967). Because of its higher elevation and position closer to the Lewis Range of the Rocky Mountains, Police Outpost Park can be expected to receive slightly more precipitation than Carway.

Police Outpost Park lies in the narrow southwest Alberta foothills belt between tilted ridges of erosion-resistant St. Mary River sandstone, an Upper Cretaceous bedrock formed during the Mesozoic Era. The park is veneered with morainal glacial debris left by continental and mountain glaciers of 10,000 to 15,000 years ago. Police Lake (Outpost Lake) is a kettle pond, left as a residual puddle of water in a depression where an ice block melted.

Southwest Alberta foothill and mountain vegetation zonation occurs in narrow north-south bands. Within a west-to-east traverse distance of 15 km, alpine tundra, montane forest, aspen parkland and fescue prairie biomes occur. Police Outpost Park lies in a tension or transition zone where the aspen parkland and fescue prairie biomes overlap, producing a mosaic of groves and grassland. Several decades of fire protection and cattle-dominated grazing have permitted the aspen parkland to invade more of the fescue prairie grassland with the result that the park area is now more heavily treed than in the past.

Plant species in the park represent western floristic elements of the fescue grassland biome and eastern floristic elements of the deciduous aspen parkland biome. Road construction in the park has provided primary succession sites open to invasion by both native and exotic species. Without future disturbance the frequency of exotic species in these roadside communities will probably decrease as fescue prairie and aspen parkland climaxes develop.

Construction of a low dam, part of a local irrigation project, at the lake outlet earlier in this century has raised the lake level sufficient to drown some shoreline vegetation, accelerate shoreline erosion and alter original beach geography. An historical absence of migration pathways left the lake devoid of fish until game species were introduced intentionally and some "trash" fish species accidentally in the early 1960's.

Microenvironments within the park are provided by the eutrophic lake, water seepage pathways, well drained gravel moraines, near-level deep black-soil meadows, and shoreline water-saturated soils.

Ecological studies of the aspen parkland biome in Canada are provided by Bird (1961). Lynch (1955) reported 115 species of forbs, 11 shrubs, 30 grasses, 8 sedges, 1 rush and 2 trees (in aspen parkland ecology studies for Glacier County, Montana adjacent to Police Outpost Park). In the present study the Police Outpost Park flora consisted of 145 forb species, 17 shrubs, 15 grasses, 6 sedges, 3 rushes and 2 trees; 188 species of vascular plants in all. No purely endemic plant species are present.

A complete set of the Police Outpost Park plants is in the author's personal herbarium at Cardston, and a duplicate set is on deposit with the Provincial Parks Division of the Department of Recreation, Parks and Wildlife in Edmonton.

Appreciation is expressed to the Provincial Parks Division for permission to collect in the park, and to Shirley Shaw for help with the field work. Identification of the willows was by Dr. George Argus of the National Museum.

Taxonomy of the reported species follows Moss (1959), except for Populus species which follow Brayshaw (1965). Naturally

occurring native and non-native species are listed, the listing of families, genera and species being alphabetical for ease of reference. Well known common names are provided.

SPECIES LIST

APOCYNACEAE - DOGBANE FAMILY

Apocynum androsaemifolium L. — Spreading Dogbane

BORAGINACEAE - BORAGE FAMILY

Cryptantha celosioides (Eastw.) Payson

Hackelia floribunda (Lehm.) I.M. Johnston

Lithospermum ruderale Lehm.

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

Lonicera involucrata (Richards.) Banks — Bracted Honeysuckle

Symphoricarpos occidentalis Hook. — Buckbrush

CARYOPHYLLACEAE - PINK FAMILY

Arenaria lateriflora L.

Cerastium arvense L.

COMPOSITAE - COMPOSITE FAMILY

Achillea millefolium L. subsp. *lanulosa* (Nutt.) Piper — Yarrow

Agoseris glauca (Pursh) Raf.

Anaphalis margaritacea (L.) Benth. & Hook. — Pearly Everlasting

Antennaria pulcherrima (Hook.) Greene	Showy Everlasting
Arnica fulgens Pursh	
Arnica sororia Greene	
Artemisia campestris L.	
Artemisia frigida Willd.	Pasture Sagewort
Artemisia ludoviciana Nutt.	Prairie Sagewort
Aster ciliolatus Lindl.	Lindley's Aster
Aster foliaceus Lindl.	
Aster hesperius A. Gray	Western Willow Aster
Aster laevis L. var. geyeri A. Gray	Smooth Aster
Aster occidentalis (Nutt.) T. & G.	
Aster pansus (Blake) Cronq.	Tufted White Prairie Aster
Aster sibiricus L.	
Balsamorhiza sagittata (Pursh) Nutt.	Balsam-root
Cirsium arvense (L.) Scop.	Canada Thistle
Cirsium hookerianum Nutt.	White Thistle
Cirsium undulatum (Nutt.) Spreng.	
Crepis runcinata (James) T. & G.	
Erigeron caespitosus Nutt.	
Erigeron subtrinervis Rydb. var. conspicuus (Rydb.) Cronq.	
Gaillardia aristata Pursh	
Grindelia squarrosa (Pursh) Dunal	Gumweed
Helianthus nuttallii T. & G.	Common Tall Sunflower
Hieracium umbellatum L.	Narrow-leaved Hawkweed
Liatris punctata Hook.	
Petasites sagittatus (Pursh) A. Gray	Arrow-leaved Coltsfoot
Prenanthes sagittata (A. Gray) A. Nels.	
Senecio canus Hook.	Prairie Groundsel

Senecio lugens Richards.

Senecio pseudaureus Rydb.

Senecio streptanthifolius Greene

Solidago decumbens Greene var. oreophila (Rydb.) Fern.

Solidago missouriensis Nutt.

Taraxacum officinale Weber — Dandelion

Tragopogon dubius Scop. — Goat's-beard

CORNACEAE - DOGWOOD FAMILY

Cornus stolonifera Michx. — Dogwood

CRUCIFERAE - MUSTARD FAMILY

Arabis holboellii Hornem.

Arabis nuttallii Robinson

Brassica juncea (L.) Cosson — Indian Mustard

Descurainia sophia (L.) Webb — Tansy Mustard

Erysimum inconspicuum (S. Wats.) MacM. — Small-flowered Rocket

Rorripa islandica (Oeder) Borbas var. hispida (Desv.) Butters and Abbe — Yellow Cress

Thlaspi arvense L. — Stinkweed

CYPERACEAE - SEDGE FAMILY

Carex deflexa Hornem.

Carex hystricina Muhl.

Carex lasiocarpa Ehrh.

Eleocharis palustris (L.) R. & S.

Scirpus acutus Muhl. — Great Bulrush

Scirpus validus Vahl.	Common Great Bulrush

ELAEAGNACEAE - OLEASTER FAMILY

Elaeagnus commutata Bernh.	Silver-berry

GENTIANACEAE - GENTIAN FAMILY

Gentiana affinis Griseb.	Prairie Gentian

GERANIACEAE - GERANIUM FAMILY

Geranium richardsonii Fisch. & Trautv.	
Geranium viscosissimum Fisch. & Mey.	Sticky Purple Geranium

GRAMINEAE - GRASS FAMILY

Agropyron subsecundum (Link) Hitchc.	Bearded Wheat Grass
Agropyron trachycaulum (Link) Malte	Slender Wheat Grass
Agrostis scabra Willd.	Hair Grass
Bromus marginatus Nees	
Calamagrostis inexpansa A. Gray	Northern Reed Grass
Calamovilfa longifolia (Hook.) Scribn.	Sand Grass
Danthonia spicata (L.) Beauv.	Poverty Oat Grass
Festuca scabrella Torr.	Rough Fescue
Festuca viridula Vasey	
Helictotrichon hookeri (Scribn.) Henr.	Hooker's Oat Grass
Hordeum jubatum L.	Foxtail Barley
Phleum pratense L.	Timothy
Poa compressa L.	Canada Bluegrass

Poa pratensis L.	Kentucky Bluegrass
Stipa richardsonii Link	Richardson Needle Grass

HIPPURIDACEAE - MARE'S-TAIL FAMILY

Hippuris vulgaris L.	Mare's-tail

IRIDACEAE - IRIS FAMILY

Sisyrinchium montanum Greene	Blue-eyed Grass

JUNCACEAE - RUSH FAMILY

Juncus balticus Willd. var. montanus Engelm.	Wire Rush
Juncus longistylis Torr.	
Juncus nodosus L.	

JUNCAGINACEAE - ARROW-GRASS FAMILY

Triglochin palustris L.	Slender Arrow-grass

LABIATAE - MINT FAMILY

Galeopsis tetrahit L.	Hemp Nettle
Mentha arvensis L. var. villosa (Benth.) S.R. Stewart	Wild Mint
Monarda fistulosa L. var. menthaefolia (Graham) Fer.	Horse Mint
Prunella vulgaris L.	Heal-all

LEGUMINOSAE - PEA FAMILY

Astragalus adsurgens Hook.	
Astragalus agrestis Dougl.	

Astragalus americanus (Hook.) M.E. Jones

Astragalus crassicarpus Nutt. Ground Plum

Astragalus robinsii (Oakes) Gray var. minor (Hook.) Barneby

Hedysarum alpinum L.

Hedysarum sulphurescens Rydb.

Lathyrus ochroleucus Hook.

Lupinus argenteus Pursh

Medicago sativa L. Alfalfa

Oxytropis campestris (L.) DC. var. gracilis (A. Nels.) Barneby Late Yellow Loco-weed

Oxytropis viscida Nutt. Viscid Loco-weed

Thermopsis rhombifolia (Nutt.) Richards. Buffalo Bean

Trifolium repens L. White Clover

Vicia americana Muhl. Wild Vetch

LILIACEAE - LILY FAMILY

Allium cernuum Roth Nodding Onion

Allium schoenoprasum L. var. sibiricum (L.) Hartm. Wild Chives

Allium textile Nels. & Macbr. Prairie Onion

Camassia quamash (Pursh) Greene Blue Camas

Disporum oreganum (S. Wats.) B. & H.

Erythronium grandiflorum Pursh Glacier Lily

Lilium philadelphicum L. var. andinum (Nutt.) Ker Tiger Lily

Smilacina stellata (L.) Desf. Star-flowered Solomon's-seal

Zygadenus elegans Pursh White Camas

Zygadenus gramineus Rydb. Death Camas

LINACEAE - FLAX FAMILY

Linum lewisii Pursh — Wild Blue Flax

ONAGRACEAE - EVENING PRIMROSE FAMILY

Epilobium angustifolium L. — Fireweed

Epilobium glandulosum Lehm.

ORCHIDACEAE - ORCHID FAMILY

Corallorhiza striata Lindl. — Striped Coral-root

Habenaria hyperborea (L.) R. Br. — Northern Green Orchid

Habenaria viridis (L.) R. Br. var. bracteata (Muhl.) A. Gray — Bracted Orchid

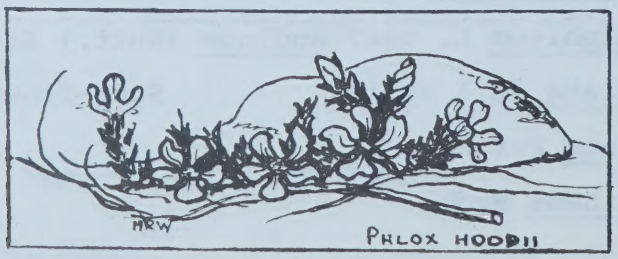
PLANTAGINACEAE - PLANTAIN FAMILY

Plantago major L. — Common Plantain

POLEMONIACEAE - PHLOX FAMILY

Phlox alyssifolia Greene — Blue Phlox

Phlox hoodii Richards. — Moss Phlox



EARLY SPRING APRIL-MAY

POLYGONACEAE - BUCKWHEAT FAMILY

Polygonum amphibium L. var. stipulaceum (Coleman) Fern. forma hirtuosum (Farw.) Fern. Water Smartweed

Polygonum aviculare L. Common Knotweed

Polygonum bistortoides Pursh Bistort

Rumex acetosella L. Sheep Sorrel

Rumex maritimus L. var. fueginus (Phil.) Dusen Golden Dock

PRIMULACEAE - PRIMROSE FAMILY

Androsace septentrionalis L. var. subumbellata A. Nels. Fairy Candelabra

Dodecatheon conjugens Greene var. viscidum (Piper) Mason Shooting Star

Lysimachia ciliata L. Fringed Loosestrife

PYROLACEAE - WINTERGREEN FAMILY

Pyrola asarifolia Michx. var. purpurea (Bunge) Fern. Common Pink Wintergreen

RANUNCULACEAE - CROWFOOT FAMILY

Actaea rubra (Ait.) Willd. Baneberry

Actaea rubra (Ait.) Willd. forma neglecta (Gillman) Robins. White Baneberry

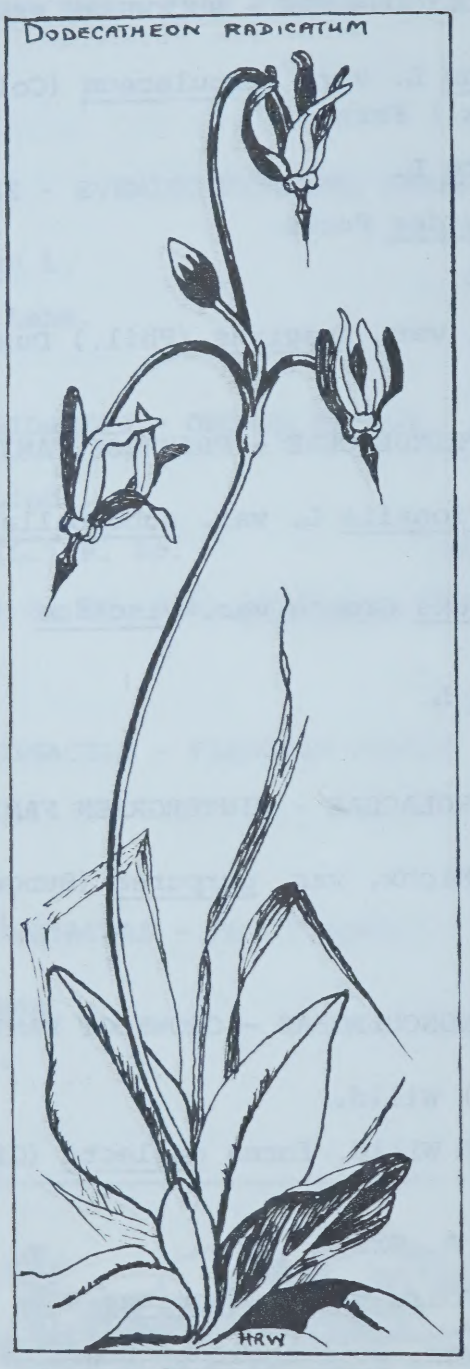
Anemone cylindrica A. Gray

Anemone multifida Poir. var. hudsoniana DC.

Anemone patens L. var. wolfgangiana (Bess.) Koch Crocus

Clematis verticellaris DC. var. columbiana (Nutt.) A. Gray

Delphinium bicolor Nutt. Low Larkspur



EARLY SUMMER JUNE

Ranunculus acris L.

Ranunculus aquatilis L. var. capillaceus (Thuill.) DC.

Ranunculus cymbalaria Pursh

Ranunculus sceleratus L.

Thalictrum venulosum Trel.

ROSACEAE - ROSE FAMILY

Amelanchier alnifolia Nutt.	Service-berry
Fragaria virginiana Duchesne	Wild Strawberry
Geum allepicum Jacq. var. strictum (Ait.) Fern.	Yellow Avens
Geum rivale L.	Purple Avens
Geum triflorum Pursh	Prairie Smoke
Potentilla anserina L.	Silverweed
Potentilla arguta Pursh	White Cinquefoil
Potentilla concinna Richards.	Early Cinquefoil
Potentilla fruticosa L.	Shrubby Cinquefoil
Potentilla glandulosa Lindl. ssp. pseudorupestris (Rydb.) Keck	
Potentilla gracilis Dougl. var. rigida (Nutt.) S. Wats.	
Potentilla gracilis Dougl. var. pulcherrima (Lehm.) Fern.	
Potentilla hippiana Lehm.	
Prunus virginiana L. var. melanocarpa (A. Nels.) Sarg.	Choke Cherry
Rosa acicularis Lindl.	Prickly Rose
Rosa woodsii Lindl.	Common Wild Rose
Spirea lucida Dougl.	White Meadowsweet

RUBIACEAE - MADDER FAMILY

Galium boreale L.	Northern Bedstraw

LATE SUMMER JULY-AUG.

SALICACEAE - WILLOW FAMILY

Populus balsamifera L.	Balsam Poplar
Populus tremuloides Michx.	Quaking Aspen
Salix bebbiana Sarg.	Beaked Willow
Salix brachycarpa Nutt.	
Salix candida Fluegge	Hoary Willow
Salix maccalliana Rowlee	
Salix pseudomonticola Ball	

SAXIFRAGACEAE - SAXIFRAGE FAMILY

Heuchera flabellifolia Rydb.	
Ribes inerme Rydb.	

SCROPHULARIACEAE - FIGWORT FAMILY

Castilleja miniata Dougl.	Common Red Paint-brush
Castilleja septentrionalis Lindl.	Common Yellow Paint-brush
Orthocarpus luteus Nutt.	Owl-clover
Pedicularis groenlandica Retz.	Elephant Head
Penstemon confertus Dougl.	Yellow Beard-tongue
Veronica americana (Raf.) Schw.	American Brooklime

UMBELLIFERAE - CARROT FAMILY

Bupleurum americanum Coult. & Rose	
Cicuta douglasii (DC.) Coult. & Rose	
Heracleum lanatum Michx.	Cow Parsnip
Lomatium foeniculaceum (Nutt.) Coult. & Rose	

Lomatium macrocarpum (Hook. & Arn.) Coult. & Rose

Lomatium triternatum (Pursh) Coult. & Rose

Osmorhiza depauperata Philippi

Perideridia gairdneri (Hook. & Arn.) Mathias — Yampa

Sanicula marilandica L. — Snake-root

Zizia aptera (A. Gray) Fern. — Meadow Parsnip

URTICACEAE - NETTLE FAMILY

Urtica lyallii S. Wats. — Stinging Nettle

VALERIANACEAE - VALERIAN FAMILY

Valeriana septentrionalis Rydb.

VIOLACEAE - VIOLET FAMILY

Viola adunca J.E. Smith — Early Blue Violet

Viola rugulosa Greene — Western Canada Violet

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ATTRACTING BIRDS

by Kerry Wood
Honorary Member, FAN

(submitted by Dorothy Broadbent, President)

All should try to encourage the good native birds, and attract them around our homes, farms, and school yards. They are beneficial at destroying weed seeds and pest insects. Each Tree Swallow eats about 50,000 mosquitoes during its summer stay in Canada. All bird box entrance holes must be carefully sanded smooth, to prevent injury to the birds.

BLUEBIRDS. The inside floor size, 5 by 5 inches; depth inside 6 to 8 inches. Entrance hole, 1 ¼ inches, placed just under the overhanging roof. There should be a clean-out; a hinged front. Always use leather gloves, if cleaning out a House Sparrow take-over.

CHICKADEES. 4 by 4 inches hole inside, 8 inch depth, the 1 inch hole placed near the top. Hide the box in dense shrubbery and do not disturb during nesting, as chickadees are secretive about nests.

PURPLE MARTINS. This is our only communal nester, and one may have 4, 6, 12, or even 20 rooms to a box. Each compartment should be at least 7 by 7, with a 2 inch entry only 1 ½ inches up from the floor. Mount on tall posts, and be prepared to defend the martins from European Starlings and House Sparrows.

TREE SWALLOWS. 5 by 5 inch floor space, 6 inch depth, and an entry hole of 1 ¼ inches. Front clean-out. One must protect

beneficial swallows from eye-pecking House Sparrows.

ROBINS AND PHOEBES often nest on platforms measuring 8 by 8 inches, placed under house or barn eaves.

Always remember: cats and birds do not mix. Wrens puncture other birds eggs, and Red Squirrels and Flying Squirrels make life miserable for chickadees.

Feed birds, winter and summer. In winter, lumps of suet on a high post will come in for attention by downy and hairy woodpeckers and chickadees. Platform feeders: use them for bread crumbs, for wildbird mixtures, for sunflower seeds. Juncos will come to them, and chickadees. Keep away magpies, crows, House Sparrows and European Starlings. The last two birds are hosts of the dreaded encephalitis, transmitted by mosquitoes.

In the Parkland parts of Alberta, it is possible to attract 120 species of birds in a single season. At least, that's the number we had in our own sanctuary last year. No, you can't come and see it: the birds are disturbed by visitors.

But there is great pleasure to be had by attracting birds, the good birds.

Thank you for your interest.

A NOTE ON OCCURRENCE OF THE MANTLED GROUND SQUIRREL OUTSIDE THE ROCKIES IN WEST-CENTRAL ALBERTA

by Jim R. Salt
Peregrine Research and Documentation Ltd.

Although the variety of specific habitats and topographic situations chosen by the Mantled Ground Squirrel, Spermophilus lateralis, is quite diverse, the species has not, to my knowledge, been found outside the Rockies in Alberta. I was thus surprised

to find two individuals of the species apparently thriving among the boulders of an artificial bridge abuttment about 15-20 miles northeast of Cadomin along the McLeod River. I first noted these animals in August 1975 when, with J. Companion, we examined the McLeod River valley for mammalian study sites. In the same boulder complex, a few metres distance, we noted a Woodchuck, Marmota monax.

A cursory examination of the region in spring 1976 failed to produce either species, and it was assumed that the ground squirrels represented a temporary and unsuccessful expansion of range by two animals which had followed the railroad track eastward down the McLeod from Cadomin, where they are common.

On 21-23 April 1977, V. Aziz and the author returned to camp at this site, to pursue other mammalian studies. We found one Mantled Ground Squirrel already out of hibernation, and two Woodchucks. Further, there was considerable evidence of other ground squirrels established in the old alluvial tables and embankments some distance from the bridges and artificial boulder-field. The single emerged ground squirrel was ear-tagged; but due to the rather early date of this record, more extensive trapping was considered to be of little use.

The valley of the McLeod in this region contains many similar or identical situations, at which Mantled Ground Squirrels could conceibably establish themselves. It is therefore a matter of interest, how far northeast this species may be found at present, and whether the eastern limit of the ground squirrels is in process of expansion.

THE PEREGRINE FALCON AND THE GREAT HORNED OWL

by Rudi Butot
81 Capri Avenue, N.W.
CALGARY, Alberta
T2L OG9

On a sunny, but windy day in the early fall, I was birding near

the town of Brant, in southern Alberta. Many species of migrants had been leisurely moving south through the province, and the marshy slough area just north of Brant was no exception. However, it was here that I spotted three birds of prey, soaring in a "holding pattern" over the undulating ground, surrounding the marsh.

Closer inspection showed them to be, two Marsh Hawks (Circus cyaneus), females or immatures, and one female Peregrine Falcon (Falco peregrinus). The two Marsh Hawks were soaring in a low flat oval pattern, from five to thirty feet above the ground; while the falcon had a slightly higher spiral, probably as high as sixty feet up. The only discernible movements were a slight tilting of the wings, when the birds wanted to go down into the wind, and another adjustment to allow the updraft to carry them back from where they had started. There seemed to be no animosity between the two species, as their loops intertwined, and none seemed in a hurry to move away from this enjoyable place.

As I moved across the road, closer to a thicket of small trees, I flushed a Great Horned Owl (Bubo virginianus). It took off across the marsh, on slow deliberate wings. When it was halfway across the marsh, the falcon seemed to notice it. The Peregrine immediately started to climb, while at the same time rapidly moving towards the owl. When it had closed the distance to within a hundred feet or so, the falcon went into a steep dive, which forced the owl down into the cattails. The owl soon sank out of sight under its own weight, and after two more passes the Peregrine flew back towards the Marsh Hawks, and continued its soaring over the landscape.

After some five minutes or so, the owl started to work itself upwards, out of the depths of the cattails. As it reached the level of the cattail spikes, it became visible again to the falcon. The Peregrine immediately detached itself from its soaring partners, gained some height, and again made a dive at the Great Horned Owl. The owl disappeared again into the lower levels of the vegetation and the falcon went back to its soaring grounds. The owl did not show itself again, during the next twenty minutes or so that I remained at the marsh.

I do not believe that the falcon made actual contact with the

owl at any time during these attacks. The only reason the owl stayed down, I presume, was because it did not relish the thought of another attack while tangled up in the dense stand of cattails.

ALBERTA CHRISTMAS BIRD COUNTS - 1976

Compiled by
D.V. Chip Weseloh
Provincial Museum of Alberta
EDMONTON, Alberta

Approximately 49,153 individual birds, representing 84 different species were recorded by 285 observers on the 15, 1976 Alberta Christmas Bird Counts (C.B.C.). Based on data in the last two issues of AN, reporting C.B.C., this was, quite convincingly, the most successful Christmas Bird Count yet held in Alberta! In terms of participants it was also more successful than the 1976 May Day Count (M.D.C.). (See Table 1 for comparisons).

Table 1. Summary of results of Alberta Christmas Bird and May Day Counts, 1973 - 1976

	Year	Number of Observers	Number of Species	Number of Individuals	Number of Counts
C.B.C.	1976	285	84	49,150	15
	1975	173	68	28,506	9
	1974	125	61	23,939	5
	1973	105	59	19,686	5
M.D.C.	1976	75	195	---	11

The results of this year's C.B.C. are presented by count area in Table 2. Non-passerine bird species are grouped by order (i.e., waterfowl, diurnal raptors, grouse, etc.) while passerine species

Table 2. Results of 1976 Alberta Christmas Bird Counts

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
Whistling Swan	1															1
Canada Goose			37					P				9				46
Mallard	89	1	1815		3	139	4	3				2110		P		4164
Gadwall												1				1
Pintail												5				5
Green-winged Teal	5		2									3				10
American Wigeon												19				19
Northern Shoveler												1				1
Wood Duck						4										4
Redhead						1										1
Ring-necked Duck												2				2
Lesser Scaup												15				15
Common Goldeneye	86		686			77						591				1440
Barrow's Goldeneye	1		3			4										8
Bufflehead												14				14
Ruddy Duck												21				21
Common Merganser			5									2				7

P=during Count Period, not seen on count day

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
Duck sp.												7				7
Goshawk			2			3			1							6
Sharp-shinned Hawk													1			1
Red-tailed Hawk												1				1
Swainson's Hawk													1			1
Rough-legged Hawk						2										2
Hawk sp.												1				1
Bald Eagle			2			1		P				3				6
Eagle sp.											1					1
Prairie Falcon			2					1								3
Merlin			12			14		1	1							28
Ruffed Grouse				4		14			1		3	23	2	19	7	73
White-tailed Ptarmigan		10														10
Sharp-tailed Grouse			23	5								6	5	11		50
Ring-necked Pheasant			12			9		3						1		25
Gray Partridge			218			170		52				10				450

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
American Coot												28				28
Killdeer	1						P					1				2
Common Snipe	2															2
Rock Dove	3		1737	8		610	20	51	225		2	25		18		2699
Great Horned Owl			1			16		2	2		2			2		25
Snowy Owl			5			1		P			P	2	1	1		10
Pygmy Owl														1		1
Great Gray Owl														1		1
Short-eared Owl			3		1	10		1					2			17
Boreal Owl														1		1
Saw-whet Owl						1										1
Belted Kingfisher	3															3

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
Common Flicker			6			5		2								13
Pileated Woodpecker	2					1			1		1	1		3		9
Hairy Woodpecker	3		13	2	2	21		P	3		4	9	5	7		69
Downy Woodpecker	5		32	1	4	69		6	10	1	9	22	4	12	3	178
N. Three-toed Woodpecker	2													1		3
B-b. Three-toed Woodpecker														1		1
Three-toed Woodpecker Sp.					1											1
Horned Lark			1					P								1
Gray Jay	31											1	7	30	2	71
Blue Jay				4	3	106		5	8	4	1	29	5	5	2	172
Black-billed Magpie	84		693	2	15	725	30	121	48	2	35	70	64	146		2035
Common Raven	233	3		19									2	36		293
Common Crow	9		1											4		14
Clark's Nutcracker	121	2														123

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
Black-capped Chickadee	225		322	24	20	898	3	5	89	3	58	171	44	157	15+	2034
Mountain Chickadee	87															87
Boreal Chickadee	36	4	3	3	2	2			9			11		62		132
Chickadee sp.	11	10														21
White-breasted Nuthatch	5		5		1	4			2			5	2	1	2	27
Red-breasted Nuthatch	3		5			3		P						3		14
Pygmy Nuthatch	1															1
Brown Creeper	4		4			6						1		1		16
American Dipper	37	2	4											4		47
Winter Wren	1															1
American Robin														1		1
Varied Thrush									1							1
Townsend's Solitaire	4															4

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
Golden-crowned Kinglet			9			5								8		22
Bohemian Waxwing	70		10,359		160	15,047	20	41	345	10	10	32	74			26,168
Cedar Waxwing						77										77
Northern Shrike			1			3					1	2		5		12
Shrike Sp.												1				1
Common Starling	2		260			40		62		8			2	1		375
House Sparrow	498		1964	11	+	972	+	211	57	63	47	21	28	16		3,888
Rusty Blackbird	2															2
Brewer's Blackbird	4															4
Evening Grosbeak	29		153		50+	668		1	168	4	1	162			10+	1,246
Purple Finch									1							1

	Banff-Canmore	Bow Summit	Calgary	Cold Lake	Devon	Edmonton	High River	Lethbridge	Red Deer	Sherwood Park	Stettler	Wabamun Lake	Wembley	Wildlife Reserve	Winfield	TOTAL
Pine Grosbeak	104		5	1		190			1			24	30	5		360
Hoary Redpoll	1		3			16										20
Common Redpoll	21		504	12		251	15		21			16	97	153		1,090
Redpoll sp.					40+						4	150				194
Red Crossbill	51															51
White-winged Crossbill	117		9			12						1				139
Dark-eyed Junco	3				1	1			1							6
Snow Bunting	132					90					14	115	285	15		651
Finch sp.	39		177													216
Passerine sp.												49				49
Total Species	41	6	40	13	15	41	7	15	21	8	16	40	20	33	9	84

are grouped by family (larks, crows, chickadees, etc.).

A summary of the distribution of the species by count area gives an insight into the diversity of Alberta's winter birdlife. Of the 84 species recorded, only 15 (18%), were seen on more than half (8 or more) of the counts. These were:

Mallard
Ruffed Grouse
Rock Dove
Hairy Woodpecker
Downy Woodpecker
Blue Jay
Black-billed Magpie
Black-capped Chickadee
Boreal Chickadee
White-breasted Nuthatch
Bohemian Waxwing
House Sparrow
Evening Grosbeak
Pine Grosbeak
Common Redpoll

Individuals of these 15 species made up slightly over 90% of all individuals observed and, the Bohemian Waxwing alone, accounted for 53% of all individuals observed! It is noteworthy that the White-breasted Nuthatch is included in this nucleus of winter birds. Only ten years ago (Salt & Walk 1966) it was considered a scarce resident of Alberta!

On the other side of the coin, 34 of the 84 species (40%) were seen in only one count area. This is an amazingly high proportion and reflects how dependent the provincial showing, and indeed that of the local count areas, is upon single occurrences of late migrants and the extra work needed to hunt out the hard-to-find residents. The species recorded on only one count in Alberta this past year were:

Whistling Swan
Gadwall
Pintail
Wood Duck
American Wigeon
Northern Shoveler
Redhead
Ring-necked Duck
Lesser Scaup
Bufflehead
Ruddy Duck
Sharp-shinned Hawk
Red-tailed Hawk
Swainson's Hawk
American Coot
Rough-legged Hawk
White-tailed Ptarmigan
Common Snipe
Pygmy Owl
Great Gray Owl
Boreal Owl
Saw-whet Owl
Belted Kingfisher

B-b. Three-toed Woodpecker
Mountain Chickadee
Pygmy Nuthatch
Winter Wren
American Robin
Varied Thrush
Townsend's Solitaire
Rusty Blackbird
Brewer's Blackbird
Purple Finch
Red Crossbill

It should be immediately obvious that the majority (25) of these 34 species are normally migrant in Alberta and would not be expected to be here in December. The remainder (9) are permanent residents (including one which is hypothetical for the province) though erratic enough in their appearance not to be predictable from year to year.

Examining Table 2, by orders and families, the most noteworthy of the waterfowl records is perhaps the 21 Ruddy Ducks from the Wabamun Lake Count. These birds were present in two flocks on the cooling pond of the Sundance Power Plant. I had not been aware previously of winter records of Ruddy Ducks in Alberta. Karl Sars (personal communication), however, tells me that small numbers of Ruddy Ducks have overwintered for the last two years on the open water areas at the Battle River Power Station, southwest of Galahad.

The Swainson's Hawk from Wembley, west of Grande Prairie, is probably the first winter record not only for Alberta but probably for Canada as well. The observer is familiar with Rough-legged Hawks and is confident of the bird's identity as a dark phase Swainson's Hawk. (Hopefully the details will be submitted to the AORC!) The numbers of Merlins wintering in Calgary and Edmonton are impressive as is the recorded presence of White-tailed Ptarmigan at Bow Summit. Bow Summit's eight White-tailed Ptarmigan last year were a national high and presumably this year's total of ten will be as well. American Coot, while of interest provincially, have been known to winter at Wabamun Lake for years! For the appearance of seven owl species, we are indebted primarily to the count from the Wildlife Reserve of Western Canada (near Cochrane) where five of

them were recorded.

Perhaps the most unexpected entry on the Alberta 1976 C.B.C. was a species which is only hypothetical for the province: the Pygmy Nuthatch. This invading tree climber from British Columbia was seen on three different days at a local feeder in Banff, (it already has been submitted to the Records Committee)! The Winter Wren also caught a few of us by surprise. A couple of species of blackbirds usually show up somewhere on Alberta Christmas Bird Counts and it was pleasing to see that 1976 was no exception. Unfortunately, Pine Siskins were absent from this year's count.

What makes for a good count

Arranging the count areas in descending order of number of species recorded, we have the distribution shown in Table 3.

Table 3. Number of species and participants recorded in Count Areas.

Area	Number of Species	Number of Observers
Banff-Canmore	41	39
Edmonton	41	76
Calgary	40	47
Wabamun Lake	40	15
Wildlife Reserve	33	26
Red Deer	21	14
Wembley	20	13
Stettler	16	19
Devon	15	4
Lethbridge	15	7+
Cold Lake	13	1
Winfield	9	2
Sherwood Park	8	2
High River	7	4
Bow Summit	6	13

Banff-Canmore, Edmonton, Calgary and Wabamun Lake were all within an eyelash of each other with 40 or more species. The number of observers on each of those four counts ranged widely from

15 to 76. Edmonton's 76 participants is probably a record turnout for any single Christmas Count. Although these four areas are quite widely spread throughout the province, the one habitat feature common to all of them is the presence of extensive areas of open water. With only a few exceptions, passerine and native or introduced birds seem to be fairly uniformly distributed across Alberta in winter (e.g. - 10 of the 15 species recorded on more than half of the Alberta Counts are of this type). Waterfowl, however, are of very patchy or clumped distribution, e.g. - all of the waterfowl, except Mallards, were found at only four count areas!

However, as has been said many times before, biggest is not always best. Bow Summit, with only six species, recorded the only ptarmigan; Wembley, Red Deer and the Wildlife Reserve of Western Canada, also, all had interesting "only occurrences". The subtle features of the habitat that were at play in these areas are more difficult to determine.

That the number of observers is important, but only to a point, can also be seen from Table 3. Banff-Canmore, Calgary and Edmonton Counts were all well attended and they had similarly high species totals. Edmonton had nearly twice the number of observers that Banff-Canmore did but recorded exactly the same number of species. Calgary had more than three times the number of observers that were present at Wabamun Lake but both recorded 40 species.

On the other end of the scale, Counts with fewer than five observers did not generally show as well as those better attended. After all five people can only cover so much territory in one day!

Counts for 1977

The results of the 1976 Alberta Christmas Bird Counts are very pleasing. It was a joy tabulating the results from so many count areas, and I was completely astounded when the provincial total reached 84 species. Do I dare ask the question? Can we do better in 1977? With a little bit of planning and foresight I think the answer is a definite "yes". More counts in northern Alberta (Fort McMurray, High Level) might consistently bring in Willow Ptarmigan and Hawk Owls, whereas Counts in extreme southern Alberta might find other late migrants. The winter bird life in the Cypress Hills

as well as that of the Milk River Drainage area is not well known. Now (September) is the time to start planning your Christmas Bird Count. For more specific details contact Lois Heibrun, Christmas Bird Count Editor, American Birds, National Audubon Society, 950 - 3rd Avenue, New York, N.Y. 10022. If this seems too complicated - simply make plans to visit an appealing area, with as many people as you can round up any time during the last two weeks of December. Let's aim for 100 species on this year's Alberta Christmas Bird Counts!

Weather Features, Participants, etc. of Local Counts

Details of local counts, participants, etc., as they were forwarded to me, are listed below. If additional details are desired or not present here, check with the compiler or local newsletter.

Banff-Canmore:- 19 December 1976, 8:00 a.m. to 5:15 p.m. Weather mostly clear, temp. 10 to 25°F. Wind W, 6 m.p.h. Snow cover 6 to 12 inc. Fresh water partly open. Wild food crop excellent. Thirty-nine observers. 35 in 10 parties. 4 at feeders. Total party-hours 88.5 (77 on foot, 11.5 by car) plus 21 at feeders; total party-miles 190 (105 on foot, 85 by car).

Observers: Allan Brooks, Ed Carleton, J. Chisholm, Neil Colgan, Sheila Douglas, Halle and Linda Flygare, Bruce and Ruth Gordon, Terry Hammell, Aileen Harmon, H. Herrle, Elizabeth and Geoffrey Holroyd (compiler - Box 1343, Banff, Alberta TOL OCO), Dennis Horwood, Rick Howie, Hazel and Tec Hutchins, Joan Jenkins, Cecilia and Dave Kraby, Margot Lowe, Richard McCowan, Keith and Margie McDougall, Diane and Mike McIvor, Harold Mortimer, Bunty Nelson, Brian and Louise Patton, Sheila Robinson, Ian Sadler, Morna Schechtal, Dan Verral, Jon Whyte, Art and Jean Wilson, Gerry Wilkie.

Bow Summit:- 2 January 1977. Centre: 51° 39' N, 116° 25' W

at south end of Bow Lake in Banff National Park, including Peyto, Bow and Hector Lakes and Helen and Mosquito Creeks. Elevation 5700' to 10741'. Habitat coverage: coniferous woodland 50%, alpine meadow 22%, glacier 18%, lake and stream 10%. Time 9:00 a.m. to 4:30 p.m. Weather AM mostly cloudy, PM mostly clear. Temperature -5° to 5°F. Wind 0, snow cover 30 to 40 in. Fresh water frozen. Wild food crop poor. Thirteen observers in 6 parties. Total party-hours 33 (30 on foot, 3 by car). Total party-miles 72 (42 on foot, 30 by car).

Observers: Allan Brooks, Neil Colgan, Halle and Linda Flygare, Aileen Harmon, Elizabeth and Geoffrey Holroyd (compiler - Box 1343, Banff, Alberta, TOL OCO), Dave Kraby, Margot Lowe, Keith and Margie McDougall, Diane and Mike McIvor, (Bow Valley Naturalists Club).

Calgary:- 19 December 1976, 47 observers, 13 parties, total party-hours - 120 (69 on foot, 51 by auto), total party-miles - 529 (86 by foot, 443 by auto). Forty species, 19098 individuals.

Cold Lake:- 18 December 1976, centre at Cold Lake Provincial Park. Scattered skies, -12°C, wind at 16 km/hr. from NNE, 12 cm of snow on ground. Total party-miles - 20 (3 on foot, 17 by truck), total party-hours - 5. Thirteen species, 96 individuals.

Observer: Willy Haras (Base Mail Room, Medley, Alberta).

Devon:- 27 December 1976 (erroneously reported as 19 December 1976 in Edmonton Naturalist Vol. 5 (2): 32). River valley townsite and fields around town. 9:30 a.m. to 12:00 noon, 2:00 p.m. to 4:00 p.m. Overcast, cold and windy. Eight inches of

snow. Four observers in two parties, one feeding station. Total party-hours - 9 (5 on foot, 4 on skis), total party-miles - 9 (4 on foot, 5 on skis). 15 species, 303 individuals.

Observers: P.I. Van Eck (compiler - 17 Clearwater Cr.), E. Van Eck, Louis and Wesley Huchachka.

Edmonton:- 19 December 1976, -13°C to -8°C, wind SSE at 10 m.p.h., sky overcast with light snow in afternoon, snow cover 6 inches, wild food average and fresh water partly open. Seventy-six observers in 14 Parties, Forty-one species, 19412 individuals.

Observers: Kay Ball, Tom Barry, Bruce (compiler) and Gail Bembridge, Brad Blocksidge, Ludo Bogaert, Ludmilla Borshevsky, Tom Branch, Dave Breekie, Fred Broadbent, Rod Burns, Wm. Carlyle, Marg Christie, Howard and Jean Conebeare, Andy Davidson, Dick Dekker, Lorne Duncan, Rainer Ebel, Eric Emery, Wm. Evans, Allan and Jim Faragini, George and Pat Finney, Bruce Frederick, Karen Goll, John Gillespie, David Gravelle, Graeme and Pat Greenlee, Dave Henbest, Miles Hennie, Betty and Harry Horton, Sandra and Tony Johns, Art Jones, Edgar Jones, Lanice Jones, Stephan Junkin, Bill Koski, Elsie and Ernie Kuyt, Don Lafontaine, Marg Lewis, Lyman Matthews, George Mealy, Robert Oaks, Jack Park, Linda Pilarski, John Retallack, Don and Barbara Robinson, Larry Roy, Duane Sept, Susan Service, Keith Smillie, Al Smith, Ken and Sylvia Smith, Eve Soder, El Souch, Dave Spalding, Terry Thormin, Eric Tull, Bob Turner, Chris Van Westarp, Eric Wallace, Tom Webb, Chip and Linda Weseloh, Tom Wetmore, Margot White, Al Wisely, John Young.

High River:- 18 December 1976, 0830-1100 hrs., -2°C with 3" of new snow on Count Day and 40 km/hr. wind from NW. Seven species, 92 individuals. Total party-miles - 17 (2 on foot, 17 by auto).

Four Observers: Charles Jauch, Martha Houston, Jack Shier, Gregg Wagner (compiler - Site 2, Box 2, R.R. #3, High River).

Lethbridge:- 26 December 1976, extremely windy, overcast to sunny later in day, -5°C. Seventeen species, 568 individuals.

Seven (plus) observers: Dorothy Clark and family, Betty Haig, Mike and Dorothy Harrop and family, Duncan MacKintoch, Michael O'Shea (compiler - 616 - 20 Street, S., Lethbridge) and Allen Roberts.

Red Deer:- Fourteen observers in six parties. Total party-hours - 19½. Total party-miles - 108 (10 by snowmobile, 4.5 by snowshoe, 93.5 by auto). Twenty-one species, 995 individuals. No other details available.

Sherwood Park:- 19 December 1976. Count held in back yard of observers. Eight species, 95 individuals.

Observers: Mr. & Mrs. Don H. Pearce.

Stettler:- 19 December 1976; 1000 to 1630 hrs., frosty, sunny p.m.; 10°C; SE breeze at 5 km/hr.; snow depth 9½"; 3 party-miles walking, 4 party-miles skiing, 183 party-miles driving; 8 feeder and farm yard sightings.

Participants (19): Jim and Alta Bunell, George and Rugh Cochrane, Earl and Elsie Cruikshank, Deirdre Code, Edith Clark, Emil Danewald, Grace Grabil, Trudy Grafe, Lloyd and Bernice Greenlee , Vera Hansen, Martha and Ron Kruger, Lloyd Lohr, Virginia Maitland (compiler - Box 1888, Stettler), Eric Smith.

Wabamun Lake:- 18 December 1976, fifteen observers in four parties. Forty species, 3793 individuals.

Observers: Andy Davidson, Rainer Ebel, George and Pat Finney, David Gravelle, Graeme Greenlee, Sandra and Tony Johns, Derek Johnson, Stefan Jungkin, Antoinette Romeo, Al Smith, El Souch, Chip (compiler - 13312 - 102 Ave., Edmonton) and Linda Weseloh.

Wembley:- 19 December 1976. Count Centre at Wembley, between Beaverlodge and Grande Prairie, Alberta, 7.5 mile radius. Sky overcast, 10°F, snow cover 3.5-4.0 inches, no wind. Total party-miles - 143, total party-hours - 23, 13 observers in six parties. Twenty species, 661 individuals.

Observers: Karl and Audrey Anderson, Robert, George and Georgia Myrick, Marcel (compiler - Box 238, Beaverlodge, Alberta) and Louise Lavelle, Walter and Yvonne MacAlister and Brent, Denis, Don and Louella Watson.

Wildlife Reserve of Western Canada

2 January 1977 - Loc. 51° 26'N 114° 35'W, center SW corner Sec. 36 T28n R5W Fifth Meridian; area as described 1975. Elev. 3725-5000 ft. Habitat coverage: wooded upland and edge 45%, wooded creek and river bottom 30%, brushy range 12%, open farmland 9%, farmyard 3%, cultivated field 1%. Jan. 2: 8:00 a.m. to 6:15 p.m. A.m. clear, p.m. partly cloudy. Temp. -26° to -10°C. Wind NNW 0 - 2 m.p.h. Snow cover 2 to 12 in., (5.08 to 30.48 cm). Water partly open. Wild food crop fair. Twenty-six observers in 12 parties plus one at feeders. Total party-hours - 83.75 (56 on foot, 27.75 by car) plus 3 at feeders; total party-miles - 381.5 (66.5 on foot, 315 by car); (610.4 km (106.4 on foot, 504 by car). Total of 33 species; about

732 individuals. (In count area of count week but not seen count day; Mallard).

Stuart Alexander, Desmond, Elizabeth and Peter Allen, Donna and Paul Anderson, Hans Boerger, Daphne Denton, Joel Duncan, Bob and Coral Cardiner, Ian Gardiner, David Gregg, Al Hanners, Eleanor Hebron, Alex and Clio Matheson, Jim Minty, Jamey Podlubny (compiler - 4520 Bulyea Rd., Calgary, Alta. T2L 2H3), Ron Purvis, Peter Sherrington, Jack and Phyllis Shier, Andrew Slater, Fay Stone, Margaret Van Tighem, Ruth Wilson. (Calgary Field Naturalists).

Winfield:- 26 December 1976; centre at 8½ mi. SE of Winfield, Alberta. Nine species, 43 individuals, four party-hours.

Observers: Colin and Ruth Harrowing (Box 55, Winfield).

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AGGRESSIVE BEHAVIOUR TOWARDS HUMANS BY A MALE BLUE GROUSE

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I recently has an opportunity to observe the unusual behaviour of a male Blue Grouse. Later I found that this behaviour had not been observed by two scientists that have been studying Blue Grouse

biology and behaviour in the field for a combined period of 35 years. My thanks to Martin K. McNicholl for his assistance and encouragement in preparing this article.

On 12 April 1977 on a cool (12C) overcast, windy (40 km/hr.) evening (1700 hrs.), approximately one kilometer northeast of Waterton townsite, Alberta; a companion and I observed a male Blue Grouse (Dendragapus obscurus) standing on the side of the road pavement. After driving 30 meters past him, we backed up and stopped directly across from the grouse. I quickly rushed out of the car with my camera. While on my knees, I began focusing in on the grouse. However, I found I couldn't keep him in focus. He kept coming closer and closer to me. Before I realized it he was a half meter away from me. The grouse approached me in a stretched out threat position, in which the head and tail remained depressed in a line with the back. His "chattering" and "hissing", together With the two erected blood engorged combs above the eyes, presented a rather formidable object. The combs changed rapidly and asynchronously from yellow to bright orange as he approached nearer to me. His tail feathers were not erected over his back nor were the"lateral apteria" on the sides of the neck exposed as those of a "displaying" male (McNicholl 1977).

Without warning the grouse lunged forward at me, striking me in the leg with his feet. I jumped back and stood up. He then began to circle around me still in the threat posture. As soon as I turned by back he struck me in the leg again. When I charged toward him, he retreated only a few centimeters. When I swung my camera case at him, he viciously flew up at it striking it with his feet. After seven or eight hits on my arms and legs, he appeared to be even less afraid of me. A car passing on the road at about 20 km/hr. was the male grouse's next object of assault. He dashed out at the car, hitting the front wheel hub cap. After falling back from the impact, he recovered and immediately attacked me again a few times. When a jeep pulled up behind our car, the grouse ran up to it "hissing" in a threat posture. When he returned to me I grabbed him. W. Leon Dawson (1920) reported the Blue Grouse cock can work himself up into such a transport during the breeding season that he can be captured by hand, as also experienced by McNicholl (pers. comm.) in courtship situations.

After four or five minutes of holding him, the engorged combs disappeared under the feathers and the grouse calmed down. When I let him go he begrudgingly walked away.

The super-aggressive behaviour of this male Blue Grouse attacking man is a very rare occurrence. There are no published accounts of a Blue Grouse attacking man. Blue Grouse rarely even show aggressive postures to observers. In 474 encounters, aggressive postures were shown only three times (0.6%) (McNicholl 1977: Table 15). However, Blue Grouse have been known to attack automobiles. Rogers (1968) reported males on territory during spring, reacted to observers and vehicles with a jump, wing beat and a half turn, finally landing in "full display" position. This same manoeuver is performed when a male Blue Grouse approaches another male Blue Grouse on territory in the spring.

The late Adolph Murie had an unpublished note of a male Blue Grouse which regularly attacked a vehicle in one of the mountain races (pers. comm. M. McNicholl 1977). Fred C. Zwickel also recorded a male Blue Grouse which regularly attacked a specific truck on Vancouver Island (McNicholl 1977). Both Dr. David A. Boag and Dr. Fred C. Zwickel have not observed or heard of a Blue Grouse attacking man in their 35 years of combined field experience studying the Blue Grouse.

Other species of grouse have on occasion been observed to attack vehicles and man. Nero (1970) observed Sharp-tailed Grouse (Pedioecetes phasianellus) attacking cars on a highway and H.H. Cleaves (1920) cited in Bent (1963) tells of a Ruffed Grouse (Bonasa umbellus) cock attacking a tractor. The Capercaillie (Tetrao urogallus) of Europe is known to attack people (Bannerman 1963).

During the breeding season many male animals become more oblivious to danger than during the rest of the year. This is due to the excessive production of testosterone (male sex hormone) during the breeding season. This sex hormone elicits sexual behaviour patterns and probably suppresses fear. The evolutionary advantages of territorial behaviour and associated aggression are well known. Extraordinary lack of fear of some animals is undoubtedly maladaptive to some innocuous species. Predation rates for

example could be much higher for the extraordinarily aggressive individuals than for normally aggressive individuals. This probably accounts for the apparent rarity of such behaviour in a population.

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HIGHLIGHTS OF SPRING BIRD MIGRATION FOR SOUTHERN ALBERTA - 1977

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Spring arrived several weeks ahead of average, but runoff was only a trickle and the land was extremely dry. Luckily May brought above average rainfall and alleviated the problem somewhat, but it appears that the refilling of the sloughs will have to await future heavy winter snows.

The first Common Loons for 1977 were reported from Calgary when three were sighted on 24 April. The first Red-necked Grebe had returned by 23 April to the Irricana district, preceded by Horned Grebe on 15 April to Calgary, Eared Grebe on 17 April to Frank Lake, while Western Grebes arrived at Brooks on 28 April, and a Pied-billed Grebe near Madden on 1 May. Three early returning White Pelicans were reported from Namaka on 24 April, while the first Double-crested Cormorant was reported from Brooks on 28 April. The first Great Blue Heron sighting came from Aldersyde on 4 April and the first Black-crowned Night Heron was seen at Namaka on 16 April. An American Bittern was seen at Namaka Lake on 7 May.

Total Whistling Swan numbers appeared to be not quite as numerous as last year. The first thirty were seen at Frank Lake on 22 March, with the numbers increasing to a maximum of 800 in the first week of April, while the last five were seen near Irricana on 23 May. Only one Trumpeter Swan was reported, from Nightingale on 17 April. The Canada Goose migration peaked during the last week of March and the first week of April when up to 1200 birds were seen on Frank Lake. One with a red neck band was seen near Milo on 31 March. White-fronted Geese were reported twice this spring, a single bird at Nightingale on 2 April, and sixteen near Strathmore on 17 April. The first few Snow Geese were at Frank Lake on 27 March, while the largest reported flock, 950, were seen at Milo on 8 April.

A pair of Black Ducks were seen in Calgary on 26 March. The first returning Pintails were reported on 6 March from Frank Lake, which became their staging area, and numbers there increased to approximately 60,000 by 31 March. The main influx of Gadwall took place during the last week of April, with 100 reported from Frank Lake on 30 April. The largest number of Green-winged Teal, 40, were seen near Kathyrn on 22 April, while 80 Blue-winged Teal were seen at Frank Lake on 30 April. The first Cinnamon Teal was reported from Namaka on 16 April, while four pair were seen there on 23 April; another four pair were reported that same day near Ensign. A male Cinnamon Teal x Blue-winged Teal hybrid was sighted twice, first at Namaka on 23 April, and then near Keoma on 7 May. Sixteen American Wigeon on 16 March near Carseland were the first reported, with the largest concentration of about 300 birds reported from Frank Lake on 31 March. The first Northern Shoveler was seen at the same lake and the same date, but the largest concentration (over 100 birds) was reported from near Irricana during the last two weeks of April. A pair of Wood Ducks were seen in Calgary on 29 April. Six Redheads were reported on 31 March from Carseland, and the largest group, consisting of over 40 birds, was seen near Irricana on 30 April. The first few Canvasback reports came in from Carseland and Frank Lake on 26 and 27 March. However, concentrations of over 40 birds were seen near Irricana and Strathmore in the second week of May. Lesser Scaup first arrived back on 23 March, while the first reported Bufflehead was seen on 30 March, both in Calgary. Ruddy Ducks were first reported on 16 April from Namaka, with over 40 reported from Frank Lake by 30 April.

One Turkey Vulture was reported from Beynon on 7 May. The hawks returned in the following order: Sharp-shinned Hawk at Calgary on 5 January (the next sighting was from Cochrane on 10 April), Rough-legged Hawk at Nanton on 5 February, Red-tailed Hawk in Calgary on 26 March, Swainson's Hawk near Keoma on 27 March, Ferruginous Hawk near Cochrane on 10 April, and Cooper's Hawk in there on 16 April. The largest number of Golden Eagles were reported from Cochrane on 10 April, where nine were sighted. Eight Bald Eagles were also seen there that day. The first Marsh Hawk report came from Strathmore on 19 March, while the first American Kestrel was seen near Millarville on 13 March.

A single Sandhill Crane was reported from Irricana on 23

April, while four were sighted near Wayne on 20 April. Semipalmated Plover were seen twice just south of Calgary, nine on 9 May and one on 23 May. Three Piping Plover were reported from Balzac on 8 and 14 May; this was the same place where a pair were seen during the summer last year. Long-billed Curlews, usually in pairs, were sighted from 20 April on from such places as Rosebud, Namaka, Langdon, Irricana, and Balzac. This is certainly a pleasant increase in numbers after the meagre reports of the last few years. A single Upland Sandpiper was seen near Namaka on 7 May, while another was reported from Irricana on 23 May, and two were sighted near Cochrane on 21 May. The first Spotted Sandpiper was reported from Calgary on 7 May, but a Solitary Sandpiper had been seen much earlier, near Blackie on 23 April. The first Greater Yellowlegs was seen near Calgary on 12 April, and a Lesser Yellowlegs had been reported there on 16 April. The first Willet report came from Irricana on 23 April; twelve were seen near Delacour on 30 April and were still there by 14 May. The smaller sandpipers were reported as follows: Pectoral Sandpiper, one near Namaka on 7 May; Baird's Sandpiper, twelve near Brant on 17 April; Least Sandpiper, two from Brant on 17 April; Semipalmated Sandpiper, one from Irricana on 23 April. One Dunlin was seen at Delacour on 30 April, while the only Sanderlings reported this spring were 25 near Irricana on 23 May. Two Marbled Godwits had returned to Kathryn on 22 April, while the largest number (210) were seen at Frank Lake on 30 April. The first American Avocet was reported from Langdon on 16 April. The first Wilson's Phalarope was seen near Delacour on 30 April, but the numbers were very low this spring. No Northern Phalarope reports were received.

A rare adult Glaucous Gull was seen and photographed on 3 April at McGregor Lake. The remainder of the gulls and terns arrived in the following order: seven Herring Gulls in Calgary on 23 March, as were twenty-one California Gulls and fifteen Ring-billed Gulls, one Franklin's Gull at High River on 10 April, eight Bonaparte's Gulls at Ricinus on 22 May, three Common Terns at Madden on 1 May, and the first Black Tern at Keoma on 7 May. The first Mourning Dove was seen near Keoma on 22 April, while a Long-eared Owl had been found nesting near Didsbury on 13 April.

The first Eastern Kingbird was reported from Keoma on 14 May, while the first Western Kingbird was seen a week later at Calgary.

The Say's Phoebe was first seen in Calgary on 25 April, and the first Least Flycatcher on 14 May at Carseland. A Western Wood Pewee was reported from Calgary on 27 April. The first swallows were seen as follows: one Tree Swallow at Frank Lake and two at Nanton on 5 April, thirteen Bank Swallows near Irricana on 14 May, four Rough-winged Swallows at Calgary on 25 April, three Barn Swallows near Namaka on 30 April, and three Cliff Swallows in Calgary on 8 May. The first reported House Wren sighting came from Calgary on 7 May, while a Long-billed Marsh Wren appeared at Namaka Lake on 23 April.

The only Brown Thrasher reported so far was seen near Drumheller on 21 May. American Robins started to return after the first week of March. A Varied Thrush had been seen in Calgary on 18 February; two Swainson's Thrushes were seen in Calgary on 22 May; while a Hermit Thrush had been reported from Morley on 23 April. Mountain Bluebird sightings were low this spring, with the first report coming from Cremona on 22 March. A very rare sighting of two Eastern Bluebirds was reported on 28 May from Calgary. The birds were later photographed and their song recorded. This is believed to be the first documented sighting for Alberta. A Townsend's Solitaire was seen near Cremona on 13 April, while the first Water Pipit was reported from Calgary on 14 April, and a Sprague's Pipit was seen near Beynon on 7 May.

The vireos and warblers returned as follows: one Solitary Vireo at Water Valley on 21 May, one Warbling Vireo at Calgary on 24 May, one Orange-crowned Warbler at Calgary on 10 May, several Yellow Warblers in Calgary on 25 April, one Cape May Warbler in Calgary on 7 May, one Yellow-rumped Warbler in Calgary on 20 April, one Ovenbird near Water Valley on 21 May, one Northern Waterthrush in Calgary on 26 May, one Connecticut Warbler at Bottrel on 14 May, one Common Yellowthroat at Keoma on 14 May, one American Redstart at Water Valley on 21 May.

The first Western Meadowlark was reported from near Nanton on 5 April. The Yellow-headed Blackbird first put in an appearance at Didsbury where two were seen on 13 April. This was five days later than the first reported Red-winged Blackbird at Milo. The first Northern Oriole report came from Calgary on 2 May, while several Brewer's Blackbirds were seen near Cochrane and Chestermere on 23

April, with the first Common Grackle being reported from Calgary on 18 April. Brown-headed Cowbirds were first reported from Chestermere where two were seen on 7 May, while up to 40 were seen near Irricana two weeks later. The Western Tanager was first reported from Calgary where two were seen on 18 May. Two Rose-breasted Grosbeaks were reported from Water Valley on 21 May. Four American Gold-finches were seen near Beynon on 22 May, while a single Rufous-sided Towhee was reported from Drumheller one day earlier.

The first Savannah Sparrows were reported from Calgary, Strathmore and Morley on 23 April, and several LeConte's Sparrows from Calgary on 9 May. One Vesper Sparrow at Carseland on 23 April was the first of this species. The first Tree Sparrows were seen near Dogpound on 6 February. From Calgary also came the first Chipping Sparrow report on 1 May, as was the case for the Clay-colored Sparrow on 6 May. A Harris' Sparrow was seen near Seebe on 13 May, while the first White-throated Sparrow sighting came from Calgary on 7 May. Surprisingly this last sighting was the only one received for this species this spring. Lapland Longspurs were reported from Lomond, Milo and Namaka in the hundreds from early April on. The Chestnut-collared Longspur was first seen near Chestermere Lake on 16 April.

More detailed tabulations for the spring period can be found in the spring issues of The Calgary Field Naturalist.

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FAN PROJECT - ESSAY CONTEST

organized by Mary S. Lore, Calgary

EDITOR'S NOTE: The following essays were sent in by Mary from a FAN essay contest for Albertans aged 8 to 16. I have refrained from any editing other than correcting obvious typographical errors. Thus, you will find grammatical errors, factual errors, dogmatic statements, anthropomorphisms, etc. sprinkled throughout the essays. I found them very interesting in that: 1) they are well written for the age group writing them, in fact better than some material I have edited written by adults, and 2) they show an intriguing combination of changing attitudes and retention of old false beliefs. This gives food for thought as to where our education efforts have been effective, and where they need improvement. Have fun reading them, and congratulations to all winners! -M.K.M.

FEDERATION OF ALBERTA NATURALISTS "ESSAY" COMPETITION WINNER -

LORNA McMULLEN, RED DEER

"THE GREAT HORNED OWL"

95% out of 130 essays

Appearance

The Great Horned Owl is sometimes called the "tiger" of the bird world. It is most powerful of all owls, and it is also one of the largest, with a length of twenty-three inches or there abouts. As with most owls the female is considerably larger than her mate. Owl's dagger-like talons hit hard and sink deep. To

get a tight grip on prey, owls have two toes that point forward and two that point backward. The flight feathers of most owls have a soft fringe that muffles the noise of flapping wings. The wide-eyed hunters can weave noiselessly through the night forest, glide low over meadows, and pounce on small animals without warning. Some owl's eyes are as large as adult humans. Because their eyes can let in a lot of light, owls see well at night. Like people, owls can look at objects with both eyes at once. An owl's eyes change focus fast. The birds also see things both near and far away at the same time. Owls use their ears as well as their eyes to find food at night. Some of them can hear a mouse squeaking half a mile away. The tufts on the top of the owl's head may look like ears, but the real ear openings lie beneath feathers at the sides of the head.

Habitat - The Great Horned Owl is a very adaptable creature and gets along well in the deserts of Arizona as in the great Canadian forests. Like most other owls it does not migrate; it does happen occasionally that some individuals move south when faced with a shortage of food.

Behaviour - This owl has a fierce disposition. Its young even when taken from the nest at an early age, usually prove to be very vicious.

Food Habits - Scientists say farmers should welcome owls. The birds eat mice and rats that damage crops. Feeding on rats and rabbits, and almost any other medium-sized prey it can find, this ferocious owl disposes, every now and then, of a domestic cat, a hen, or a skunk. It has been known to seize turkeys on their night roost and to drive away eagles. Its bill is powerful, its feet are like grappling hooks. It is especially partial to skunks. The powerful scent does not bother the Great Horned Owl one hoot as he has little or no sense of smell.

General Comments - The Great Horned Owl is being recognized as the Provincial Bird emblem of Alberta according to recent legislation. It is a bird who enjoys a long life and it has been recorded that one Great Horned Owl reached the age of sixty-eight years in a zoo. However, such an age is not indicative of a life span in the wild. Since the owl is active at night and since it is a bird of prey, you would not expect its plumage to be bright and it is not. But

whatever owls lack in the way of brilliant colouring, they make up for in subtle shading and intricacy of feather pattern. Most owls nest in low trees or other natural cavities and lay white eggs. These eggs are rounder than most birds' eggs, probably an adaptation that makes it easier for the incubating bird to turn the eggs in such close quarters as are provided in tree cavities.

I have never seen a Great Horned Owl but if I was a little mouse, I would not want to see one either!

FEDERATION OF ALBERTA NATURALISTS

ESSAY COMPETITION WINNER - June, 1977

"BIGHORN SHEEP" by David Morris

Canmore Elementary School, Canmore

SECOND 94%

The ancestral home of all wild sheep is in the mountains near central Asia. These early sheep, smaller than the Bighorn, with more slender horns, reached eastern Asia and made their way to North America by using the Bering Land Bridge. This land bridge sometimes joined North America to Asia during the Pleistocene period. Once in North America these sheep found food and a suitable habitat, so they stayed.

In about a thousand years the sheep had spread down the main ranges of North America to as far as northern Mexico. Small groups of sheep moved into the Cascade and Sierra Nevada ranges.

The Rocky Mountain Bighorn has a large range that now goes from south New Mexico to Wapiti Pass in B.C. The Bighorn was confined south of the ice through the last Pleistocene glacial advance and was then generally south of the Columbia and Snake Rivers. As the ice retreated it followed the mountains north until it reached its present limits. These northern limits were set by the biological barrier of the Peace River and the intrusion of the lower elevation forested land that forms an effective barrier between the southernmost Stone Sheep and the northernmost Bighorn.

In Alberta's Rockies near Banff and Jasper, newborn Bighorn lambs appear first around the last week in May. There is a concentration of births mainly around the first two weeks in June. The new generation has been completed by the end of June. In all the types of North American wild sheep twin births are quite unusual.

The gestation period of wild sheep is about one hundred and seventy-five days. The timing of births will reflect the occurrence of the rut (breeding) six months previously. In the north the Bighorn begins breeding activity in late November and carries on through December.

The rut of this sheep has been studied in detail. It is during the rut that levels of superiority really show in the mature lambs. Old heavy horned rams do about eighty to ninety percent of all the breeding.

Seasonal behaviour has most ram bands spending the summers in high mountain pastures where food is easily found. The females and the young are usually found at lower elevations than the rams ranges. In early autumn both groups move to winter ranges where breeding occurs. Then the rams go back to their own group so that only the young rams remain with the females during the winter. It is important to know how fast a Bighorn population can increase under normal circumstances as in some areas they are becoming extinct. Most studies done show that under uncrowded circumstances this increase is about twenty-six percent per year. But if hunting takes place this figure will be lower as then the sheep change their ranges patterns. The killing of sheep and the taking of trophy heads upsets the Bighorn's social life and then the breeding cycle is disrupted.

Sometimes you may find elk and sheep sharing the same ranges. This is not usual as elk and sheep eat the same food plants and competition for the food results. In some places around Banff, Alberta, the elk population has displaced the Bighorn from certain ranges. Predators such as cougars, wolves, coyotes, bobcats and Golden Eagles also reduce the sheeps' rate of increase.

The outstanding characteristic about the Bighorn is its horns.

Sometimes these may weigh more than the skeleton of the sheep. At maturity this could be as much as twenty-five pounds. Two roofs of bone cover the brain to help withstand the hard clashes during rutting time. The sheep uses these as weapons or shields but they also stand for dominance. Usually, only rams with similar or equal size horns will fight each other. Their horns also tell the sheep's age by counting the number of segments on them.

The sheep have a close family relationship and the females usually live and die in the bands that they were born into. The rams leave for other groups that are nearby. Bighorn Sheep tend to stay within their own limited range. Young sheep do not go far away to colonize new ranges. The young inherit ranges from their elders. This is an important observation to keep in mind if sheep populations which have been reduced or are in danger of becoming extinct are worked with by man. The sheep do not like new ranges and so will not dispurse naturally. Man will have to learn how to move and protect new herds as well as making the sheep feel at home on a strange range, if hunting and natural environmental changes cause a depletion of the Bighorn Sheep in certain areas.

Since the Bighorn Sheep and other members of this wild sheep family, came all the way from Asia during the Pleistocene age, it would be a shame to see them become extinct as has the Badlands Sheep.

FEDERATION OF ALBERTA NATURALISTS "ESSAY COMPETITION" JUNE, 1977

THIRD PLACE WINNER - Joanne Seddon

831 Hunterston Crescent, N.W., Calgary 93%

Winner of $10.00 cheque out of 130 entries

"ANIMAL REPORT ON THE RED FOX OF ALBERTA"

The Red Fox lives in southern and central Alberta. The Red Fox eats mice, fruit, frogs, rabbits and carcasses of dead animals. In the late summer and fall foxes feed on sweet corn, plums and wild grapes. As the season moves on they may kill animals wounded by hunters. There is an abundant food supply during the autumn

months and the red fox gets fat. This helps the fox to get through the winter snow and cold.

Although the fox may be seen any hour of the day, it prefers to hunt between dusk and dawn. Unless the food supply is scarce, the nightly range does not cover more than one or two miles. When the sun is high, it curls up on a stump or rock and sleeps.

The paws of the Red Fox are adapted for jumping onto its prey. The claws are used to dig into the prey. The hind foot of the Red Fox is two inches and the front foot is two and one half inches. The main difference between a fox and a dog is the structure of the foxes' nose and eyes. They have bright eyes, sharp muzzles and long bushy tails.

The enemies of the Red Fox are mostly man and his dog. The fox is so sly it can sometimes avoid traps set for it. To break the scent, it may wade into water, mix with a herd of cattle, or leap onto the back of another animal. Sometimes it will let itself be handled for a chance of escape.

The external coverings of the fox are a nice fur to keep it warm in the winter and the tail is big and bushy and so in the winter he can use it to curl up in and keep himself warm when he is asleep.

The Red Fox is red, black and white. The tail is red and white, the body is red, the legs are black and the face is all colors. A lot of people hunt him for his soft fur.

The Red Fox does not hibernate but is active all year round.

The fox has a den underground in a cave, among rocks or in a hollow log or tree. Some foxes dig their own dens but most use burrows abandoned by such animals as woodchucks. The fox may enlarge a burrow if necessary. An underground den may be as long as seventy-five feet and have several entrances. The female has four to ten pups in a litter. The male kills mice for the pups. Pups appear in the spring. The male and female may live apart until mating season. The male and female feed their pups freshly killed mice.

The Red Fox prefers to live in the grasslands in Europe, Asia and Canada and south-central Alberta. The Red Fox is endangered and is being protected by government legislation.

Summary - The fox is a very sly animal and their scientific name is Vulpes fulva and the family name is Canidae. The body length is 36 to 42 inches and the tail is 13 to 15 inches with the weight being six to fifteen pounds. The pups play by having mock fights and by tossing things into the air.

The female is known as Vixen, the male as Dog and the young as pups. (Many lovely pictures, drawings and other illustrations accompanied this essay which cannot be sent along for reproduction with this report).

FEDERATION OF ALBERTA NATURALISTS "ESSAY COMPETITION" JUNE, 1977

HONORABLE MENTION WINNER - Lee Hindle

Canmore Elementary, Canmore

"DEATH MIGHT RATTLE - THE DIAMOND BACK RATTLESNAKE"

Hi! there all you snake lovers and reptile freaks! I am your host for this fang popping report on us Rattlesnakes.

My first subject I would like to talk about is me. I am a Diamondback Rattlesnake. I am the only one of us beautiful creatures in Alberta. There are many of my relatives elsewhere but I won't waste precious time on them instead of ME!

My big brothers often weigh 25 to 30 pounds. Giant Diamondbacks sometimes, as recorded here, grow up to seven feet, two inches. We Diamondbacks get our sophisticated name from the diamond-shaped blotches along our G R E A T figure.

Now talking continental, the most dangerous animals on the North American continent, by a margin of 1000 to 1, are not bears, mountain lions or wolves, but venomous snakes, and most of those

are us rattlers.

All Rattlesnakes (female) bear live young instead of having eggs. These newborn snakes can take good care of themselves and can give painful bites.

Our APPETIZING diet consists of amphibians, reptiles, birds and small rodents m-m m-m fang-er lickin' good!

We Rattlesnakes send out our poison through our two long hollow fangs, in our upper jaw. The poison forms in a pair of glands, one for each fang. When we rattlers get angry, out goes the fangs and HEADS UP!

The legislators of Alberta have been passing laws to let licensed and experienced snake hunters catch rattlesnakes and dispose of their venom. There are two methods shown here. (Illustrations show, "Milking out the Venom" and "Breaking the Fangs Out").

Take one experience with Ray Woods on a pitch black night in Northern Alberta. His dog was barking furiously so Ray went through the doorway to let the animal loose when he felt sort of a pinch. He later tied a tourniquet to his leg and called a doctor who arrived in twenty minutes. His leg had swelled to an alarming size and he had vomited continuously. His weight eventually reduced itself from 210 pounds to 175 pounds. He was taken to the hospital and escaped death and had to wear a special shoe for the rest of his life. This was done by Cousin Copperhead. Not too many of them in Alberta and thank your lucky rattles for that. That gives us Diamondbacks a bad name you know.

Well, I guess I've rounded up the whole thing about us beautiful creatures and I hope you like it, just so long as I did not make an ASP of myself! SSSSSS! and RATTLE! RATTLE!

FEDERATION OF ALBERTA NATURALISTS "ESSAY COMPETITION"

HONORABLE MENTION AWARD

CATEGORY THREE OF ESSAY COMP. NATURAL RESOURCES

"WATER" by Brett Brooks

Mossleigh School, Mossleigh

(Some excellent illustrations accompanied essay)

The most common liquid on the earth is water. It covers about three-fourths of the earth's surface. There are large amounts of water in the atmosphere and the soil. About two-thirds of the weight of a man's body is water. Animal tissues and plants also contain a high percentage of water.

Life, which started in the sea, has never lost its need for water. After millions of years, animals and plants learned to live on land. They were able to live out of the water, but not without water. It has always been necessary for all living things because with water we live and without water we die. Water is our oldest friend and a dependable servant.

Water in Our Daily Lives

In order to live, the human body must take in a certain amount of water at regular intervals. The movement of water determines the climate in which we live and provides fresh water for living things. In our homes, water is used for drinking, preparing food, washing, removing waste, and watering plants. Beverages such as milk, tea, coffee, and soft drinks are largely water. An egg is about seventy-four percent water; a watermelon, ninety-two percent and a piece of beefsteak about seventy-three percent water.

Water is also necessary to our industrial life. It turns wheels of hydroelectric plants that furnish light for our cities and power for industries. Irrigation lets men grow crops where nature has made the area too dry. Lakes and rivers are important water highways for the movement of freight.

Although water is usually a helpful servant of man, it can be a destructive enemy. Floods cause millions of dollars worth of damage.

Water and the History of Man

The first civilizations developed in river valleys such as the Nile, the Tigris, and the Ganges. People gathered in these areas because the rivers provided water for them and for the plants which they needed for food. In ancient times, land travel was always difficult and often impossible. Man learned to build boats to travel on water. At first these water journeys were short, but they brought peoples of different regions together. The voyages became longer until men finally travelled around the world by water.

Early inhabitants of the earth realized the importance of water. These early inhabitants built reservoirs or aqua ducts, to collect and store water. They watched it wear away rocks and carry off soil by the process of erosion. The ancient wise men thought that everything in nature came from only four elements, water, earth, air and fire. This was not correct, but in 1785 Lavoisier proved that water is composed of two parts of hydrogen and one part of oxygen.

Water is very important in our lives and we should try not to waste it. I think scientists should keep on with their work of trying to find ways of keeping water clean and not to waste it. Industries should not pour industrial waste into rivers or lakes. Instead they should make their own river that leads to a big hole. If scientists could think of a way to remove waste and have clean water that would keep clean water from being wasted.

If we keep wasting water, there will be no more clean water and we will die. We could always dig for water, but it is not always clean.

FEDERATION OF ALBERTA NATURALISTS "ESSAY COMPETITION"

"THE COYOTE" by Sandra Gateman

Mossleigh, Alberta

Earned 90%, Special Recognition Award

Have you ever heard a long, eerie howl after dark? Or have you ever seen a dog-like animal racing across a field in pursuit of some animal you cannot see? If you ever have, chances are you were hearing and seeing a coyote.

A coyote's habitat ranges from western North America from Panama to Alaska.

Coyotes range from 16 to 21 inches at the shoulder. They have bushy tails, a thick, grayish coat with yellowish underparts, muzzle and ears; and its nose is slender and pointed. It's ears are erect and thickly covered with hair. Their average weight is 22 pounds.

They eat gophers, rats, rabbits and animals it finds dead, some sheep or stray calves and colts.

After a gestation period of about 63 days, five to seven pups are born in a secluded den. They are blind for the first ten days; however, development is rapid and in 5 to 6 weeks they are able to leave the den. In July or August the pups are old enough to run with their parents to learn the art of hunting and self-preservation.

At one time it may have been fair to say that coyotes were being killed for no reason at all by a wide variety of poisons, strychnine, cyanide and the slow-to-degrade poison "1080" and machines such as rifles, guns, trucks, jeeps, snowmobiles and even motorcycles. The coyote is now afforded seasonal protection in forested areas and is managed primarily as a furbearing animal and secondly as a recreational species (?)

One of the strangest of the coyote's friendships is that between the badger and him. One may wonder how two animals so

different from one another could become friends.

Because of the badger's ability to dig so efficiently and because of the coyote's speed, these two may team up to catch a rodent. Some people may assume this was as far as the relationship went; but that is not true, for coyotes and badgers may be very good friends, even when they are hunting together!

SPECIAL RECOGNITION AWARD - 90%

"THE WOLF" by Michelle Graff

42 Sherwood Crescent, Red Deer, Alberta T4N OA3

Age 11, Mountview School

Received Special Mention in the Federation of Alberta Naturalists "Essay Competition"

Habitat

Wolves live where there is big game. Wolves roam over a large area of land.

In Alberta you would be most likely to find them in the foothills region.

Appearance

Wolves are brownish grey in color. They are the size of a large dog. Wolves have big feet that spread out and act like snowshoes in the winter. Their tails are medium in length and bushy. A German Shepard looks quite a bit like a wolf.

Food

Wolves depend mostly on big game like deer, moose and elk. Wolves do catch rabbits, beaver, squirrels and mice, but when big game is around this is their main source of food. Sometimes they raid a farmer's or rancher's sheep or cattle.

Family Life

Usually the wolf population is divided into packs. This pack is organized so that each wolf knows his or her social standing with every other wolf in the pack.

Wolves have a good deal of friendship and even affection to the other members of the pack. The word pack does not mean any number of wolves. A pair means a male and a female. A family is a male, a female and their young. It is unusual for a pair to breed more than once in a year. There are five to seven members in a pack. Most of the young are born in May. Some are born as early as April or as late as June. The pup's eyes are shut when they are born, but open in about thirteen days. The mother will not let any other members of the pack into the den until the pups are two weeks old. After two weeks the father is let in and a favorite aunt.

When the pups are a month old they venture out in front of the den.

Legislation or Game Laws Protection

There are no game laws protecting the wolf. Sometimes when ranchers and farmers complain a lot about the wolf eating their livestock, the Alberta Government sends out Government employees, called Predator Control Officers who shoot off some of the wolves so maybe they won't be such a nuisance to farmers and rancers.

Personal Experience

I have never had any personal experience with a wolf except to see them in zoos. The reason I picked wolves as my topic for my report is because I think wolves have been mistreated, there is always a good side to everything.

Behaviour

When the pups are two months old the pack moves out of the den to an open area which is their headquarters and is sometimes called a rendezvous. It is used until the pups are old enough to

travel with the pack. Wolves usually do their hunting at night and sleep during the day.

The reason wolves are hated is the way they kill their prey. They attack the victim from behind and pull it down. So the animal is not dead when they start eating.

The wolf brings home bones in its mouth for the young. They swallow the red meat and regurgitate it for the young pups.

Reference

PIMLOTT, Douglas H. and Rutter, Russell J. THE WORLD OF THE WOLF Published by J.B. Lippincott Company, Philadelphia and New York, 1968.

PRESIDENT'S PAGE

by Dorothy Broadbent
R.R. #4, RED DEER, Alberta

The spring FAN Meeting was held in Drumheller this year. John Powell reported that The Naturalist's Guide is progressing well. Naturalists from the various regions of the Province have been asked to read and comment on the material from their area.

Jim Butler, Head of Interpretation, and Education, Provincial Parks, has agreed to become an Appointed Director of the Federation. He will be a great asset on the Environmental Education Committee. There seems to be some confusion over the two types of Directors of FAN. Each club is permitted to nominate two Elected Directors annually. Appointed Directors are chosen by the Board and may number up to a third of the elected Directors. At the moment we have four Appointed Directors although, because we have eight clubs in the Federation, we may appoint five.

The Directors finished their business meeting early and they were able to enjoy the rare luxury of taking part in the afternoon

field trip. The flowers and birds of the Badlands are at their best in the spring and everyone spent an enjoyable afternoon hiking up endless canyons and searching among the rocks and crevices for flowers, fossils and birds.

Eldon Bruins, Chief Wildlife Officer for the Red Deer region, gave a talk Friday evening. He outlined his proposals for a wildlife sanctuary in the Clearwater region west of Sundre. This is part of Slim Davies' proposed Provincial Park. As the area is rich in minerals, it is highly unlikely that the Provincial Government will put the needs of the people and the wildlife, ahead of the $6 million presently being derived from leases. Eldon's idea of a wildlife sanctuary is a stop-gap measure, not an entirely satisfactory solution from a naturalists point of view. He is mainly concerned with restoring the declining numbers of game animals but most wildlife officers are concerned with game species because little public interest is shown in non-game species.

Lack of public concern has cost us another loss of public land. The pressure from skiers and the skiing industry, has pursuaded Parks Canada to allow expansion of the Sunshine Ski Resort. The Minister of Northern Affairs has announced a new policy; he will allow no new ski resorts within the National Parks, but he will permit the existing ones to expand. This type of planning could eventually result in huge alpine ski areas, similar to those in Europe, where one can ski from one country to another. This new policy is a betrayal of the philosophy of our National Parks, large alpine ski complexes are not compatible with the natural environment, they do not protect and preserve the native populations of plants and animals. The proposed gondola lift for Sunshine will enable 6,000 people per day to visit the very fragile and world famous Sunshine meadows. High mountain wilderness areas cannot stand this kind of use. I find it hard to believe that Canadians have allowed big business to move in and exploit their priceless possession, Banff National Park. Developments are also planned for Lake Louise, Norquay and Jasper ski areas. It is too late to save Sunshine but it isn't too late to express your disapproval to the Prime Minister and the Minister of Northern Affairs.

This type of commercial development in our National Parks is allowed to happen because big business is influential and the gen-

eral public is too lazy to bother writing letters. Politicians don't worry too much about letters and briefs from organizations because there are few votes involved but letters from the voting public are taken more seriously if they arrive in sufficient quantities.

The Federal and Provincial Governments are becoming arrogant, they are totally disregarding the wishes of the people. The Minister of the Environment's decision to build the Dam on the Red Deer River is against the wishes of the people of the region and against the advice of the ECA. It is an example of just how arrogant and dictatorial our governments are becoming. After holding two sets of public hearings, the ECA concluded that dam was not wanted or needed for at least ten years; yet over 4,000 acres are to be flooded at a cost of $61 million. All this to supply some unknown users with water. Obviously, industry intends to use the water but the ECA and the people of the region have only been able to speculate on the type of industry being lured to this fertile and scenic river basin. The Red Deer valley is very rich in coal, perhaps it will become a region famous for its heavy industry like the Rhur Valley. Our Government obviously intends to turn this Province into another Ontario and there is nothing to stop them except your votes and that means letters to the Premier and the Minister of the Environment. The ECA is about to be divested of it's effectiveness, it will operate with only a chairman, perhaps it has been doing its work too well?

FAN has just lost one of its workers; our hard working Editor Martin McNicholl has left the Province. He has done a tremendous job and we are finding it hard to replace him. Best wishes to him in his new position. Best wishes also to another hard working naturalist, Chip Weseloh, he too is leaving the Province.

CLUB NEWS

Alberta Speleological Society:- No news from this, our newest, corporate member.

Bow Valley Naturalists:- This active club had a busy summer planned according to their Newsletter No. 3, 1977. This included seven outings, FAN's species count day, a study on Vermilion Lakes, a litter blitz, and a visitor-use survey of the Vermilion Lakes area. Earlier this spring, they enjoyed a presentation by Cliff Wallis and Cleve Werschler, "Before the Deluge."

Buffalo Lake Naturalists:- Newsletter Editor Virginia R. Maitland became President at the annual meeting of January 20, 1977, according to their fifth newsletter. Dorothea Laing became Vice-President, Mary Mulbach - Secretary and Terry Grafe - Treasurer. An outing was held at Ewing Lake on January 23, and another there on March 13. Several indoor meetings and workshops were also planned. This club also planned to participate in the FAN species day. To date this is the only club to have submitted a nomination for the Loran L. Goulden Memorial Award.

Calgary Field Naturalists' Society:- Retiring President Mary S. Lore reports to me that C.F.N.S. will host the May 1978 FAN weekend, and has voted to donate $100.00 to the Bucks for Wildlife fund. This club has numerous field trips, speakers, and workshops announced in their bulletin "The Calgary Field Naturalist." It is also very active in conservation issues. Their by-laws have recently been revised. More details can be read in Mary Lore's "The President's Annual Report", Calgary Field Naturalist 9: 33-34, 1977. At the June 18 Annual General Meeting, Andrew Slater was elected President, and awards were given to Des Allen, Elaine Cathcart and Mary Lore.

Edmonton Bird Club:- The May 1977 newsletter of this club announces a field trip to Elk Island National Park, as well as others to Beaverhill Lake and Cold Lake. The April speaker was Jim Butler, speaking on Wood Warblers (Parulidae).

Edmonton Natural History Club:- The April 1977 Edmonton Naturalist mentions field trips to Wagner Bog and Beaverhill Lake, butterfly study nights, and a lecture by Dr. Lew Kline on Pikas. The summer issue of the Edmonton Naturalist was to be a special on Beaverhill Lake. The May meeting was to feature Tom Webb, speaking on butterflies and moths.

High River Naturalists' Society:- No report.

Lethbridge Naturalists' Society:- No report.

Red Deer River Naturalists:- The March-April 1977 newsletter of this club reports that Alvin Goetz was to speak on "Environmental Agriculture" at the March meeting. The summer newsletter indicates a busy season, with nearly two full pages of field trips!

CONSERVATION NEWS

Tax Break for Energy Conservers:- Equipment designed for energy conservation, such as heat pumps, solar cells, solar furnaces, various thermal insulation materials, and wind generators will be exempt from the 12% sales tax under a January 28, 1977 amendment to the Excise Tax Act. The exemption is retroactive to 26 May 1976, according to an article in Nature Canada 6(2): 21, 1977. Another article on the same page notes the high energy wastage in relation to Gross National Product of the U.S.A. in comparison to Sweden, and classifies Canada as similar to the U.S. in this regard. Here is a chance to correct this.

Pipelines:- Pipeline Update 22 (14 March 1977) reports Prime Minister Trudeau's promise to U.S. President Carter for a Canadian decision on the MacKenzie Valley pipeline by 1 September 1977. This would likely give Parliament little, if any, time for debate on the issue. Pipeline Update No. 22 was published on 1 April 1977, and was entirely an April Fool's joke. Pipeline Update No. 23, 12 April 1977 reports that President Carter has sent the Transit Pipelines Agreement between Canada and the U.S. to his Senate for ratification, and that Polar Gas has announced plans to file application to build a pipeline from Melville Island in Hudson Bay to Longlac, Ontario. On 9 and 10 May 1977 news reports broke that the Berger Commission has come out in favour of a 10-year moratorium on building a pipeline through the MacKenzie Valley. Berger favours not building the line, but even if built the 10-year period

should considerably reduce its harmful effects by allowing more careful planning of the precise route. Pipeline Update 22 predicted that the National Energy Board's recommendation would not be forthcoming until early July (after our press time). Pipeline Update No. 27 (May 24, 1977) gave National Energy Board deadlines of June 6 and June 20 for filing of final and rebuttal arguments.

Solar Power in Alberta:- According to a report in the March 1977 Newsletter of the Edmonton Chapter of N.P.P.A.C., four houses in Alberta and B.C. will be heated by solar power under grants by the National Research Council of Canada as part of a Federal program of research into new and renewable energy sources. According to an article by Gary Park in Environment News 6(2): 20-21, 1977, one of these houses, in Calgary, will be capable of meeting 75% of the household heat needed for the December-April cold period. A large office complex designed for energy conservation is also being planned for Calgary, according to the latter article. One feature of this complex is re-use of used energy. Another article in the same issue of Environment News (pp. 10-11) describes an energy-conserving house being built at Ellerslie by the University of Alberta. Such projects should pave the way for enormous energy savings in Canada once their principles are widely used.

Elk Transplant Near Red Deer:- We learn from the April 1977 Bulletin of the Manitoba Nat. Soc. that the Alberta Fish and Wildlife Division plan to move about 70 elk from Elk Island National Park to a mountain area southwest of Red Deer where they used to thrive until they succumbed to hunters. The Division hopes to have the area declared off-limits to hunting.

GCOS Acquitted:- The lack of teeth in enforcing environmental laws is exemplified by the acquittal of Great Canadian Oil Sands Ltd. on all seven charges of violations of anti-pollution laws at Fort McMurray. The province is planning to appeal the dismissal of three of the charges, according to Environment News 6(2): 22, 1977.

Dust Charges Against Hough Cement:- After several discussions and orders the Alberta Environment Department has charged Hough Cement Ltd. with violating the Clean Air Act at a plant 45 miles north of

Edmonton. Environment News 6(2): 22, 1977 reports that if found guilty, the company's maximum fine could be $5,000. or three months imprisonment or both per charge.

Snowmobiles Banned in Willmore:- The Manitoba Nat. Soc. Bulletin for April 1977 reports the good news that snowmobiles may be banned in the Willmore Wilderness in Alberta. Penalties are said to range up to $1,000. or 60 days in jail.

1977 Blue List for Birds:- Robert Arbib has published the 1977 "early warning" list of North American birds in Amer. Birds 30: 1031-1039. This is an annual list of species which have shown serious declines in some part of their range. Officially endangered species, such as the Whooping Crane, are not included. Many of the species are common birds, but the fact that they are in trouble in some part of their range warrants special attention to them in all areas where they regularly occur. We publish here those species on the list that occur in Alberta in the hope that observers will pay special notice to them in reporting bird observations, nesting data, etc. A large number of additional species have been suggested for possible listing. Please report declines noted in your area for any species. Blue listed species which occur normally in Alberta are: Red-necked Grebe, Western Grebe, White Pelican, Double-crested Cormorant, Black-crowned Night Heron, American Bittern, Canvasback, Sharp-shinned Hawk, Cooper's Hawk, Swainson's Hawk, Ferruginous Hawk, Marsh Hawk, Osprey, Prairie Falcon, Merlin, American Kestrel, Sage Grouse, Piping Plover, Upland Sandpiper, Burrowing Owl, Short-eared Owl, Common Nighthawk, Hairy Woodpecker, Cliff Swallow, Purple Martin, Mountain Bluebird, Loggerhead Shrike, Yellow Warbler, Yellow-breasted Chat, Grasshopper Sparrow, and Vesper Sparrow.

Elk Island:- Stage 2 of the Public Participation Program for Elk Island National Park became available in May. This is a document outlining proposals to which the public were invited to comment further. An important feature is an outline of all suggestions from earlier public input, with the reaction of Parks Canada planners to them: accept, reject, or under consideration, and reasons for these rulings. Naturalists will find much to agree

with in the proposals (e.g. - phasing-out of all motor powered boats, reduction of vehicular access, and others) and a little with which to disagree (most will not favour retention of the golf course, although a gradual phase-out is being considered).

Planning for Calgary and Edmonton:- According to articles in Environment News 6(2), 1977 city councils in Alberta's two major cities are seriously considering various alternatives for the future. These include limited growth policies and preservation of natural areas within the cities.

NOTES AND NEWS

Mammals Around Edmonton:- The April 1977 Newsletter of the Edmonton Chapter, N.P.P.A.C. contains a request for mammal sightings or signs within 100 km, i.e. 60 miles of Edmonton for a pamphlet on the mammals of Edmonton being prepared for the John Janzen Nature Centre by Dr. Don Meredith. These should be sent through Edmonton Parks and Recreation, 10th Floor, CN Tower, Edmonton, Alberta T5J OKl.

New Alberta Species?:- The results of a final laboratory exam in a course in natural history at the University of Alberta have revealed several previously unknown birds and mammals in the province! These include Trail's Nuthatch, Owl Hawk, Green Wren, Golden Barrowhead, Red Headed Finch, Blue-winged Finch, Golden Hawk, Ringnecked Finch (previously thought to be Killdeer), Yellow-billed Thrush, Great Horny Owl, Kitty Hawk (previously C. Nighthawk), Northern Cuckoo, Red-sided Blackbird, Groshawk, Hermit Thrasher, Red Crested Woodpecker, Great Scoot, Purple Longspur, Wippet (previously Willet), Horny Woodpecker, Long Horned Owl, Snowy Duck (a winter resident we previously thought was a transient goose), Long-tailed Mountain Shrew, Small-footed Bat, Yellow-tailed Chipmunk. John H. Alway also reported that our identification has been far out on some species. For example, what we thought was a lemming is a Fisher, and what we took to be a Woodchuck is a Wolverine. What many take to be a Kangaroo Rat is really a fast-running burrower called Long-tailed Shrew! I am especially embarrassed to learn those ground-

nesting birds I studied for four summers on Vancouver Island were not Common Nighthawks, but Ospreys. I have also been calling several birds the wrong things. My "Loggerhead Shrike" is really a Parasitic Jaeger, "Rufous Hummingbird" is a Brown Creeper, "Crow" is a cowbird, and "Goshawk" is a Gray Jay (what were those gray flocking birds I was banding in the Kananaskis?). And, alas, for those who tire of new classifications, we find that Raccoons now belong to the family Poryocianae and Kangaroo Rats to Hottorodidae. Furthermore, owls have been transferred to the "family" Ciconiformes (well Geoff. Hogan and I did see a Great Horned Owl in a Great Blue Heron nest on P.E.I. this spring).

Pat Clayton Leaves Nature Centre:- We note from Edmonton Nat. 5: 89, that Pat Clayton is no longer with the John Janzen Nature Centre in Edmonton. However, the Nature Centre's loss is not shared with the rest of the naturalist community - Pat is now chief receptionist, Gift Shop manageress, etc. at the Muttart Conservatory, also in Edmonton.

Addenda to Prairie Nest Record Scheme:- After the June Alberta Nat. went to press, Herbert W.R. Copland sent an added note of interest on the Prairie Nest Record Scheme. He thought the number of cards from provinces other than Alberta would be of interest to our readers. "From 1958 to 1976 nest record cards received from the other provinces in the Prairie Nest Records Scheme are approximately as follows: Manitoba 4,000; Northwest Territories 1,200; and Saskatchewan 13,400."

CBC Snubs Naturalists:- After months of publicity announcing a special National Film Board film on Whooping Cranes, "A Great White Bird", the CBC pre-empted the film for a hockey game. At least some newspapers still announced the film the day it was to have been shown. To add insult to injury, the film was rescheduled for the day before it was announced rather than announcing a new time to which the unaware could adjust their schedule. This seems to me a serious affront to the NFB, CWS and U.S. F.W.S., and the public.

Third Annual Loran L. Goulden Memorial Award:- Nominations are invited for the 3rd Annual Loran L. Goulden Award for outstanding

work on the natural history of Alberta. Nominees need not reside in Alberta, but the work recognized must have been conducted within the province. Amateurs and professionals who take special efforts to encourage amateurs will be given priority in selection of the awardee. All forms of nature may be featured in the nominee's work. The first two awardees were Dick Dekker and W. Ray Salt. Nominations must reach the chairman of the committee by 1 December 1977 for the 1978 award, but nominations will be accepted at any time for consideration of future awards. The awardee will be notified in late December and the award presented at the Annual General Meeting of the Edmonton Natural History Club in January 1978. Please send nominations to M.K. McNicholl, Dept. of Biology, Brock University, St. Catherines, Ontario L2S 3A1.

Chip Weseloh Leaves Alberta:- Naturalists in Alberta will be sad to learn that Dr. D.V. (Chip) Weseloh has resigned his position as Curator of Ornithology at the Provincial Museum in Edmonton, and is moving to Ontario. Chip has a long list of publications based on Alberta nature, mostly birds, and several more in preparation. He served the naturalist community in Alberta in many ways, including: Editor Calgary Field Naturalist, Editor Edmonton Naturalist, Secretary Alberta Ornithological Records Committee, Associate Editor Alberta Naturalist, FAN representative director on Canadian Nature Federation, and promotion of the Northern Alberta Naturalists Club. Obviously, he will be missed.

Whooping Crane Nest in Alberta:- According to a Canadian Wildlife Service release published in the Winnipeg Free Press, a Whooping Crane nest was found two miles inside the Alberta boundary this year, said to be the first in 73 years. The report also quoted Ernie Kuyt, finder of the nest, as stating a total of 17 nests, including the one in Alberta, had been found in Wood Buffalo National Park this year. Presumably a formal report will appear in a scientific journal.

Alberta Bluebird Species Triple!:- The latest "Birds of Alberta" by W. Ray Salt and Jim R. Salt includes only one species of bluebird, the Mountain Bluebird as a positively identified Alberta bird. However, this spring brings news of two Eastern Bluebirds

in the Calgary area (see Rudi Butot's report in this issue), a species listed by the Salts as hypothetical. In addition, Chip Weseloh has informed me of a Banff area record of Western Bluebird this spring. The authenticity of these reports awaits verification, but no doubt all details will be published in time. When the Eastern and Mountain Bluebird ranges met in Manitoba, they started to hybridize. Will they here, too? And, what of the Western?

First Canadian Nesting of a Black-necked Stilt:- Excitement ran rampant among the Edmonton birding fraternity this spring when Dick Dekker, Ron Slaghter, the Bulmers and others started reporting Black-necked Stilts, primarily but not exclusively at Beaverhill Lake. The combined efforts of Dekker, Slaghter, the Weselohs, Bob Lister, and Terry Thormin eventually led to the discovery of two nests, the first authentic records of nests of this species in Canada (there is one old time disputed record for Saskatchewan). Ludo Bogaert spent hours in a blind photographing the birds in black-and-white, colour slide, and colour print. In spite of being almost ploughed under, chicks hatched, and your Editor was dragged out to band 2 on July 4. More details will be published elsewhere. In the meantime, I wonder what the stilts' check-list of Alberta naturalists totals.

Address of AORC:- Since Chip Weseloh, Secretary of the Alberta Ornithological Records Committee, is leaving Alberta, all submissions should be sent to the Chairman of the Committee until such time as a new secretary is appointed. The address is:

Dr. Robert W. Turner
Chairman, AORC
7724 - 139 Street
EDMONTON, Alberta

Butot Receives Honourable Mention in Photo Contest:- I was pleased to find that Rudi Butot of Calgary had received honourable mention in a Canadian photo contest for winter scenes for his "frozen pond", published in "Photo Life" for July 1977 (p. 40). Rudi is one of the most regular contributors to both the Alberta Naturalist and the Calgary Field Naturalist. Several of his photographs were pub-

lished in the 1976 "Birds of Alberta" by W. Ray Salt and Jim R. Salt. Dennis Nugent, currently a M.Sc. student at the University of Alberta in Zoology won second prize in the contest.

REQUESTS

The National Museum of Natural Sciences in Ottawa is developing a permanent exhibit gallery entitled "Animal Geography". A number of high quality colour photographs of specific subjects will be required for this exhibit. Can you supply any of the photos listed below?

1. Large format (2¼ x 2¼ or larger) transparencies capable of being enlarged to 4' x 4'

   Caribou - a herd migrating

   Remora & shark - remoras attached to shark, ray, turtle, etc. species not critical

   Predator & prey - a predator such as a lynx, coyote, bear catching or eating a prey such as a rabbit, salmon, etc.

   Man-altered environment - a smoggy cityscape, industrial area, garbage dump, etc.

   Cowboy & cattle - an action shot of cowboy rounding up cattle or a pastoral scene of a shepherd and dog watching over sheep

2. 35mm (or larger) colour transparencies or negatives

   Caribou - a group swimming

   Desert - sandy desert or dunes bounded by a line of vegetation

   Ocean - large expanse of ocean with an aerial view of a small island or waves battering a rocky coast

Greater Prairie Chicken - (Tympanuchus cupido), sage grouse - typical habitats of each, "non courtship" poses

If you have any photos which you think might be suitable for the exhibit, please send a copy of it to the address below.

We will negotiate payment and credit for the use of photos selected. Those photos that do not meet our specifications will be returned by registered mail. Thank you.

Barry Peers
Exhibit Planner
Interpretation & Extension Division
National Museum of Natural Sciences
National Museums of Canada
OTTAWA, Ontario
K1A OM8

REMINDERS

FAN members -- effective January 1, 1978, the membership fee will be $4.00 per year. If your membership expires with the December 1977 issue of the Alberta Naturalist, renewals should be in the amount of $4.00. Supporting memberships are still $10.00 or more, with the excess over the basic $4.00 being deductible from taxable income.

FAN Fall Meeting -- tentatively, this will be held at Lundbreck Falls, west of Pincher Creek, on September 17-18, 1977. Details are not available at present, contact your local club later for further information.

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Deadlines for submission of material to the Editor are: February 1, May 1, August 1 and November 1. Please include your address. All maps, charts, etc., should be submitted on white paper, of the appropriate size for publication, preferably done in type and/or india ink.

FAN membership fees are $3.00 per year regular, $10.00 supporting, tax deductible ($7.00 worth). Mail remittance to: Federation of Alberta Naturalists, Box 1472, Edmonton, Alberta T5J 2N5.

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